THE NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

NEW SERIES. Boston, September, 1870. VOL. IV.---NO. 9.

R. P. EATON & CO., PUBLISHERS, OFFICE, 34 MERCHANTS' ROW. MONTHLY. SIMON BROWN, S. FLETCHER, } EDITORS.

SEPTEMBER.

Some persons live long in a short time, while others live beyond the allotted three score years and ten, whose days appear to them as but a span. "How short the month has been!" exclaims one, whose mind has been fully occupied in works of benevolence, in revealing the mysteries of science, and observing the wonderful operations of nature about him. Such a mind has had no heavy moments, but, buoyant and elastic, has risen from hour to hour into some unexplored regions of truth, pushing aside the annoyances in its way, and expanding with the healthful acquisitions which are fitting it for the skies.

"How *long* the week has been!" is the desponding utterance of another, whose time has been frittered away without labor, or the pursuit of any ennobling object which would impart to it life and vigor. All the works of the Creative Hand show unceasing activity. The sea recedes but to return again: when it rests it rots; as in the expressive language of the "Ancient Mariner:"—

> "The very deep did rot; O Christ!
> That even this should be!
> Yea, slimy things did crawl with legs
> Upon the slimy sea."

The winds circle the globe, bearing nourishment in their breath, and sustain life in all animated beings. Rivers run to the sea, and there, eliminated by the ever-working sun, seek the skies again, and pour their rich treasures again and again upon the thirsty earth. So must it be with man. The inactive mind sinks first into indifference and then to inanity.

It has always seemed to us that "The Seasons," coming each in their allotted time, afford the clearest evidence of the consummate wisdom of the Creator. The wants of God's children, mental and physical, are adapted to the Seasons, and the Seasons to them, else there would be no harmony in them. It was left for man to notice the changing character of each Season, and make a further division into Months, whose peculiarities are as interesting, if not as grand as those of the Seasons themselves.

To the occupied mind, the Months fleet past us so swiftly, that, though we never mistake them while they are present with us, yet the moment any one of them is gone by we begin to blend the recollection of its features with those of the one which preceded it, or that

which has taken its place, and thus confuse them together until we know not "which is which." And then, to mend the matter, when the whole of them have danced their graceful round, hand in hand, before us, not being able to think of either separately, we unite them all together in one imagination, and call them the Past Year, as we gather flowers into a bunch, and call them a bouquet.

"Now this should not be. Each one of the sweet sisterhood has features sufficiently marked and distinct to entitle her to a place and a name; and if we mistake these features, and attribute those of any one to any other, it is because we look at them with a cold and uninterested, and therefore an unobservant regard."

In order to really enjoy the Months, we must be strongly impressed with the peculiarities of each—the weather, atmospheric phenomena, the coming in and going out of plants, animated life about us, in our domestic animals, in insect and bird-life, and the changing sounds which proceed from them at the different stages of their existence. We must "pay equal devotion to each in her turn; the blooming *May* and the blushing *June* disdain the vows of these votaries who have not previously wept at the feet of the weeping *April*, or sighed in unison with the sad breath of *March*. And it is the same with all the rest. They present a sweet emblem of the *ideal* of a happy and united family; to each member of which the best proof you can offer that you are worthy of *her* love, is, that you have gained that of her sisters; and to whom the best evidence you can give of being able to love either worthily, is, that you love all." This should be the manner in which we should regard the Months. They will pass rapidly, to be sure, but will instruct us as they pass of our own and their immortality,—immortal, because ever renewed, and bearing the seeds of their renewal within themselves.

"These, as they change, ALMIGHTY FATHER, these are but the varied GOD! The rolling year is full of THEE."

—Official returns received at the Bureau of Statistics show that during the month of April there was exported from the port of New York fish spawn to the value of $15,340. There were also exported to France during the same month silkworm eggs valued at $660.

SEPTEMBER EMPLOYMENTS.

O sweet September! thy first breezes bring
The dry leaf's rustle and the squirrel's laughter,
The cool, fresh air, whence health and vigor spring,
And promise of exceeding joy hereafter.
—*George Arnold.*

In another column we have spoken of some of the things which go to make September a pleasant month. Now let us call up some of the more severe and practical duties which devolve upon us at this time. A modest suggestion cannot harm the most skilful and careful cultivator, and a walk just taken over the farm prompts us to mention several things which are always best done in September,—some, indeed, which are only appropriate then.

Sowing to Grass.—As the grass crop is a leading one with us, it is important always to give it careful attention. Lands that are to be devoted to grass next year may be stocked to great advantage early in September. Plough and pulverize until the soil is fine; it will richly repay to do this thoroughly. Do not go over more ground than you can work into good tilth and manure with some liberality with fine manure. Grass seed is slow to take, even on a tolerably rich soil, but where it can find a particle of well-rotted manure, it will germinate freely, take root at once, and go on to flourish unless choked by weeds or parched by drought. It is more profitable to get a ton and a half of hay on an acre than on an acre and a half. There is less cost of ploughing and all after preparation, and less in getting the hay. The top dressing should never be omitted. Herdsgrass and redtop are not easily winter-killed, and clover seed may be sown on late snows in the spring. A peck of herdsgrass and from three to four pecks of redtop are commonly used; some use only two or three pecks of redtop. Six to ten pounds of clover are usually employed in spring sowing.

Weeds.—Cut up the rank weeds that skirt the edges of corn or potato fields, and from every other place where they are growing, together with all other refuse vegetable matter, and place them in a heap. Overhaul occasionally, and allow the whole to gain a degree of heat that will certainly kill every seed of a plant which it contains. What is left after fermentation, mingled with fresh stall manure, will make a good compost for top-dressing.

In the Garden, in the latter part of the month, take up and pot such plants as it is

intended to keep in the house. Collect the bulbs of dahlias, tuberoses, amaryllis, gladioli, and such others as are desired to be saved. These should be placed in a dry room, away from frost. Gather seeds of annuals that have not already been collected, marking their varieties distinctly, and place them where they will not contract moisture.

If there are pear trees in the garden or on the farm, give them attention. All pears, we believe, ripen best away from the tree. To know when to take them off, and just how to treat them, is the point to be gained. Different varieties ripen at different times, extending from July to mid-winter. When gathered, they should be laid away in masses, as if laid on shelves singly they shrivel and are worthless. They have no oily matter in the skin, as apples have, and soon lose their juices by evaporation. In order to ripen them fully they should be taken from the box, or whatever packed in, a few at a time, and laid on the mantelpiece or other shelf, where they will become yellow and delicious in a few days.

Mr. John Gordon, of Brighton, Mass., who cultivates the pear largely, lays a woolen cloth on the bottom of a box, then a layer of pears, and so on until the box is filled. In this way they turn yellow, and come into fine condition for market. As they are needed, they must be ripened off as stated above. The culture, preservation and ripening of pears must be learned chiefly by experience.

Harvesting Indian Corn.—We have come to the conclusion, by the aid of careful experiments, that the best way to harvest Indian corn is to cut it up near the roots and shock it as soon as the kernel is fairly glazed over, and is somewhat hard.

1. It is less work than it is to cut the stalks or "top it," as it is called, tie them in bundles and bring them out of the field, as it must be done, by hand.

2. According to experiments made in England in harvesting small grains, the wheat which was cut two weeks before it was fully ripe gave the most flour and of the finest quality. We can see no reason why there would not be a similar condition with corn. When cut in that stage it has reached its growth, the ear and kernel are fully formed, the leaves have began to wither, and action between the roots and soil has probably nearly or quite ceased. But, as in the case of the wheat, nature's effort is to perfect the seed, and the juices of the plant go to complete that process.

3. Although it may seem improbable to those who have not tried it, it is nevertheless true, that it is easier to husk corn cut up at the roots than where the tops are cut off, if care is taken to load the butts all the same way, and keep them so in unloading. That is, keep the butts of several shocks the same way, and then of several more in another direction, if more convenient in loading. In this way there will be no entangling among them.

4. When cut up at the ground the fodder is much better than when left standing later. Rain does not penetrate the shocks much, and they come to the barn with a rich green and pleasant fragrance.

5. And lastly, when cut up and shocked, there is no danger from frost, and consequent losses by it.

Muck.—We would urge upon the farmer once more to lay up a store of this manure. By its liberal use he will increase his crops, permanently improve his farm, and raise money to pay taxes, purchase carriages, pay for school-books, clothing, groceries, and many other things which are essential in the family.

Finally, we suggest that it is an excellent rule to do all kinds of work in the fall that will facilitate business in the spring, and that it is the favored time to make general improvements.

Cheese Factories in Illinois.—A correspondent of the Chicago *Journal* gives a list of 111 cheese factories in the counties of Kane, M'Henry, DeKalb, Cook, Dupay, Boone, Kankakee, Lake, and Winnebago, all of which are in the northeastern part of the State. The total number of cows given in this list is 33,580, valued at $50 each. Total capital invested, $1,679,000. Amount of cheese made, 16,093,000 pounds. Total value of cheese made, at 14 cents per pound, $2,253,020. The pasturage of this section is excellent, and an abundance of pure water is afforded by the tributaries of the Fox and Rock rivers, and numerous never-failing springs. Probably other portions of Illinois are well adapted to the dairy business, and we see no reason why the factory system will not be extensively introduced into most of the northern part of the great West.

LAMOILLE VALLEY, VT., CHEESE FACTORY.—D. L. Field, Esq , the agent of this factory, situated at West Milton, Vt., furnishes us with the following statement of the business for the month of May. Work was commenced on the third day of the month with about 300 cows, which number was increasing during the month to some 500; from which 239,563 pounds of milk were received during the month, which made 25 107 pounds of cheese. It took 9.541 pounds of milk for a pound of cheese. The average price at the Factory for the month was 13.864 cents per pound. The cheese was sold on commission, by Gardner Murphy & Co., Boston. The maker is H. B. Jones.

For the New England Farmer.

THE GARDEN IN SEPTEMBER.

This month brings to us another change of the seasons. Germination and growth are now succeeded by the ripening processes. We are now to harvest and enjoy. But this is hardly all. The prudent, thoughtful gardener will provide for his earthly blessings, by performing his part towards securing another season's growth. Considerable judgment needs be exercised, at this season, in saving and storing seeds, vegetables, planting for a continuance, providing suitable material to be converted into nourishment of future growth, &c.

Seed-beds are now to be prepared for the growth of winter salads, and for spring use; also, for starting some kinds of spring vegetables. A large amount of spring labor with hot-beds may be saved by giving a little attention during this and the succeeding month to the growing young plants of the more hardy vegetables that are most in demand in early spring. Once well started an inch or two high, they may be pricked out in cold frames during October or November, and, properly treated and cared for during winter, they will be ready to transplant and grow as soon as the frost is out of the ground and it can be cultivated. To plant seeds for growing plants to winter over, select a warm, moist place; dig the ground over thoroughly with the digging fork, working in plenty of well-rotted manure; rake and fine the surface for a nice seed bed; then sow the seed in drills six inches apart, or if not to be transplanted this fall, a foot apart is better. Spinach may be sown in beds of any shape, rows a foot apart; cover the seeds lightly and roll well. Plants for wintering should not be allowed to get too large, or they will run to blossom and seed, when transplanted. If liable to grow too large, repeated transplanting during the fall will check growth. Lettuce, cabbage and salads of different kinds, constitute the principal plants for wintering in cold frames.

As soon as the crops are matured and ripe, they should be gathered and the ground cleared, and at any leisure opportunity, needed improvements can now be made, more thoroughly and leisurely than in a more busy season. All should have some pride of appearance, some ambition to improve on the past and the present. Efforts to accomplish this may interest some younger member of family to take a greater interest in rural pursuits. Judicious improvements will add to the value of the estate, though their cost may not be immediately realized in pocket money. The grounds of few country residents furnish all the fruits and vegetables that they might produce, or which the family needs. Yet how often do we hear, especially in relation to fruit trees, some such remark as "it takes them so long to grow I shall not live to eat of their fruit," and hence no trees are planted, no garden provided.

BEANS.—Gather as they ripen, selecting the very best for seed, and put in a dry place. Shell when dry, and clean and assort thoroughly. Limas that may still be green are excellent for winter, picked and dried in the pod, to be shelled as used.

BLACKBERRIES.—Remove unnecessary old and weak canes, reserving the strongest for next season's fruiting.

CABBAGE, CAULIFLOWER, &C —Keep late plants well hoed, and sow seeds for plants for cold frame.

CELERY.—Earth up as frequently as once in two weeks; always doing it when the plants are dry. Earthing when the plants are damp from any cause, causes them to decay, rust, &c. Dirt scattered into the heart produces similar effects.

CORN.—Save the earliest, largest and *best* ears from healthy, prolific stalks, for seed. The kernels shaved off from the cob may be dried, and when properly cooked, next winter, will give a most welcome dish.

CUCUMBERS.—The vines have mostly done bearing, except it be late planted for pickle; these should be kept close picked. Save seed from the ripe ones; cut them in halves lengthwise, scrape out the seeds and centre with an iron spoon, into a pail or tub. If but few, mash and wash out; if more, let them stand, covered, in the sun and they will ferment and separate, the seed settling to the bottom, when they must have water added and washed out, drained, spread and dried well.

ENDIVE.—Hoe and give liquid manure, treating similar to lettuce; gather and tie the leaves for bleaching.

GRAPES —Unless there be danger of frosts, it is better to let them get fully ripe before gathering. In gathering, use the greatest care in detatching the bunches and in handling, to preserve the bloom and beauty.

MELONS.—Few will be left fit for eating after the 10th, unless carefully protected. Seeds may be saved from the fully ripe ones, washed and dried.

PARSLEY.—Seed may be sown to produce for next spring's use.

PICKLES.—Use the small cucumbers for pickling in vinegar or for salting; packed in a tub, a layer of coarse salt and a layer of pickles, they will make their own brine and keep an indefinite time if they are kept under brine by weights. A few will soften on top, these must be thrown out. We have kept them thus year after year. Have some on hand now that were salted three or four years since, sound as ever, and keep them in the cellar.

SQUASHES.—Pick winter squash before any frost, for a very light touch often defeats their keeping. Pack them away in a dry place free from cold. Handle them with the greatest care.

TOMATOES.—Green tomatoes make nice pickles, put down in sharp vinegar with green peppers, spices, &c. Make ketchup of ripe ones, can, &c., for winter use.

Gather and save all seeds, as they ripen; sweet herbs, &c., as they come to maturity. Let nothing be wasted; what cannot be marketed or used may be made use of for the compost heap which should receive constant liberal additions. W. H. WHITE.

South Windsor, Conn., 1870.

BEES IN AUGUST.

Great care should be used this month not to tempt bees to robbing; leave no honey where they can get at it, and do not open hives to expose the combs while bees are flying, for this is almost sure to make trouble when honey is scarce in flowers. See that all stocks are strong and have a fertile queen.

Queenless swarms should be united to one having a fertile queen or treated to brimstone now, for if left to themselves they must soon either be robbed or devoured by worms. The same may be said of all weak swarms.

In this vicinity we have had a very poor season for bees, and I have similar reports from several other localities. Here, black bees that cast swarms as well as the young swarms will most of them, I fear, need more honey than they will have to carry them through the winter.

Italians have been more successful. Not only are their store combs well filled but they have made a good surplus. Five stocks in my yard have stored three hundred pounds of honey in boxes,—an average of sixty pounds each.

Buckwheat usually yields a large supply of honey, and in sections where it is cultivated is a great help to light swarms. Although the honey obtained from it is of inferior quality and not very saleable in the market, it answers every purpose for the bees in winter and as it blooms after most other sources of honey are gone, would probably pay a large profit if sown near apiaries, for its honey alone. So profuse is the yield from this plant that the swarming fever is frequently revived and swarms issue during its bloom.

J. H. C., of Temple Mills, asks about the utility of so many drones and how to manage them. When a single colony is isolated far from other bees, as is frequently the case, probably the great number of drones would not be objectionable, but when several are kept in one yard, either usually has enough for the whole. The drone is the male bee and the queen leaves the hive to meet them in the air for fecundation. At this time no eggs or brood is left in the hive from which another queen can be raised, and her loss would be a total loss to the colony. Hence it is desirable that she should make as quick a trip as possible and not remain long in the air exposed to the many accidents that might befall her. Drones are great consumers and the less there are more than is actually necessary, the better. A strong colony *will have* some drones in summer but what they can raise in a piece of comb as large as one's hand seems to satisfy them as well as half a hive full. In moveable comb hives all the drone comb can be removed but about that amount and worker comb fitted into its place. This puts a stop to raising so many drones, and the colony is made much more prosperous thereby.—*G. W. P. Gerrard, Plymouth, in Maine Farmer.*

WILLOW FENCE.

In giving a description of Mr. D. Whitfield's farm, near Pontiac, a correspondent of the *Michigan Farmer* says, the first thing that took my attention was the willow fence. Its beauty and its thriftiness was quite an attraction; and on examination I found it was a living protection against cattle, sheep or hogs. This fence has grown up so rapidly that the shoots were strong enough for stakes. These were put in from two to three feet apart, and the smaller shoots were wattled between them. The stakes all grew, sending out their thick shoots, and the larger layers in the wattles followed the example. There are enough shoots now on this hedge to furnish a great number of farms with sets, and it can be trimmed every year into any shape that suits the owner, supplying sets by the million, and there is now a great demand for them. He has other hedges coming on, and he intends to fence his whole farm as fast as it can be conveniently done. This is the best and most rapid growing fence I have yet seen, and I have no doubt will be a great acquisition to the agricultural community. As the stakes grow in size, the hedge stiffens and grows in strength.

WOOLEN MANUFACTURES.

According to reports and statistics the grinders of wool have been "marching on" at a pretty good pace since 1862, whatever may have been the progress of the growers of wool. The number of mills that make carpets has increased to about one hundred, and they supply the market with ordinary qualities and several mills are now making the finer grades, which have heretofore been imported from Europe. On cloths and cassimeres there are more than three hundred factories; on shawls, about twenty-five; flannels, thirty; blankets, forty-five; hosiery and knit goods, one hundred and fifty; on balmorals, worsted goods, &c., the increase has been very great. In fact, there is no branch of the woolen manufacture, says Mr. Morrill, except that of fine broadcloths, in which entire success has not been attained, and the immense supply required in the country is almost wholly provided at home. Of the "cloths and cassimeres" imported, reaching about six million dollars in value yearly, nearly all is broadcloth. Imported "shawls" reach less than two million dollars in value; "carpets," about four million; and "dress goods," chiefly of worsted, and worsted with cotton or silk, go to the large sum of fifteen million dollars in value.

In some remarks in the *Rural New Yorker*, on the report of Mr. Morrill, Dr. Randall says, "the extent of the present possession of the market for fine woolens of every other description than what are distinctively known as dress broadcloths, is best illustrated by a list of nearly three hundred factories, which, but for its length, we would give in full; represented in the New York market alone, all engaged on cassimeres, coatings, beavers, tweeds, repellants, ladies' cloakings, and other like fine goods, all wool or cotton warp, and which were, until recently, nearly all imported. The distinctively fine goods are almost all the growth under the tariffs since 1861, and the market of the United States, now grown to three times the measure of 1860, is held by this domestic production so nearly exclusively that the proportion of foreign goods entering into it is scarcely distinguishable. For the first time in the history of the trade, the market is really supplied with a domestic production of mohairs, alpacas, Italian cloths, &c.; delaines having been abundant for some years previously. We assume, therefore, that the tariff on woolens is effective and valuable, as it was designed to be, in developing at home the enormous industry that must be engaged in the manufacture of woolens to supply our markets. Further examination in almost every other class of woolens would show the same progress. Knit goods almost completely supply the field at home; and the growth since 1862 is to about three times the value then produced. Shawls of all sorts, other than mohair or camel's hair, are no longer imported in any considerable degree. Blankets, both of the finer white sorts, including carriage and traveling blankets, as well as all coarse Indian blankets, are also not imported to any amount, while the domestic production has reached large aggregates. Bearing in mind the enormous importation of all classes of blankets formerly existing, the value of the protection which secures this industry will be felt."

All this may at first sight afford little consolation to the wool grower in the present depressed condition of his business; but on second thought, may we not hope that, as our manufacturers succeed in furnishing our market with cloths, our wool growers will eventually furnish the wool for these cloths? On the basis of the agreement between grower and manufacturer, may not this hope grow into a demand?

ANALYSIS OF FODDER CORN.

In the course of some strictures in the *Rural New Yorker* on Dr. Loring's condemnation of green corn stalks as fodder for milch cows, Mr. E. W. Stewart gives the analysis of green corn, by J. H. Salisbury, of New York, and of Wolf and Knapp, German chemists, whose tables are used by Prof. Johnson in his book on "How Crops Grow."

Mr. Salisbury made the most thorough examination, chemically, of the Indian corn plant in all its stages, from six inches high to maturity, that has ever been made by any chemist. These separate analyses of root and stalk, and leaf, and tassel, and silk, and husk, and ear, clearly showed that the whole plant, previous to earing, is accumulating the the materials with which to perfect the grain.

This is the grand aim of nature—the perfection of the seed.

Just before the formation of the ear—the best time for feeding it—the general average of these analyses (calculated without water), show this green corn to contain of

Sugar and extract	35.00
Matter obtained from fibre by a weak solution of potash	12.00
Dextrine or gum	6.04
Albumen and casein	7.96
Woody fibre	39.00
	100.00

Remarking on the result of his analysis, Mr. Salisbury says:—"The plant, during the tasseling, owing to the very large percentage of sugar and extract, with the respectable quantity of albuminous matter and dextrine, which the stalk, leaves and sheaths contain, must afford a very palatable as well as nutritious fodder."

The analysis of the German chemists was made of green corn in the latter part of August. Their analysis (calculated without water) is

Albuminoids or flesh formers	6 20
Carbohydrates or heat and fat producers	61.24
Crude woody fibre	26.36
Ash	6 20
	100.00

This, says Mr. Stewart, does not look as if green corn was a crude, indigestible, innutritious substance,—the meanest fodder that was ever given to a cow. He shows that it differs but little from turnips or beets, according to analyses.

The analysis of Hungarian grass or millet, which Dr. Loring recommends as a substitute for fodder corn is given as follows, to compare with that of the corn stalks:—

Albuminoids or flesh formers	15 95
Carbohydrates or heat and fat producers	43 74
Crude woody fibre	33.35
Ash	6.96
	100.00

On this showing, it is claimed that the chemists agree with the practical farmer, that green corn stalks, previous to earing, furnish a valuable fodder.

SHEEP RAISING IN AUSTRALIA.

A correspondent of the San Francisco *Bulletin* furnishes that paper with a long article on this subject from which we condense the following:—

Sheep farmers are better known in Australia by the name of squatters, for the same reason that squatters are called by that name here, but with very different results. Owing to no more favorable circumstances, backed by their industry, economy, and indomitable perseverance, they have as a class risen from comparative poverty and obscurity to wealth and power, and are now the moneyed aristocracy of Australia.

A large "run" or station is one great object aimed at by the squatter, as he finds that a large one can be managed almost at as little expense as a small one. Five thousand sheep would be considered the very smallest number to begin with, and this only by one or two young men putting their means together who have been learning the business three or five years on some large "station." The average stations would number 50,000 sheep, while some run to 500,000, and in one or two instances to 1,000,000. Superior stock is a cardinal virtue with the Australia squatters. To obtain the pure Spanish merino sheep is his chief end as a successful squatter. Many squatters make it a specialty to import, breed and sell these splendid sheep, and none are more successful.

Sheep, in South Australia and Victoria, yield an average of about 3 lbs per fleece. New South Wales being a warmer climate, yelds about 2 3-4 lbs; and Queensland, which is still warmer about 2 1-2 lbs. But what the sheep of the two former colonies gain in weight by the moderation of the climate, the two latter make up by the additional fineness of the wool in consequence of the climate being so much warmer.

There are in the four Australian colonies about 10,000,000 sheep; these produce an average of at least 2 3-4 pounds of wool each, making 27,500,000 pounds in all, to be shipped to the London market annually. And taking the average price in the London market at 40 cents per pound, it would net $11,000,000. Notwithstanding these large results, we are confident that they are only the beginning of future increase and wealth in those colonies. As the stock becomes purer they will become more valuable in every respect.

The squatter calculates that the increase from his ewes and other profits should pay the annual working expenses of his "run" or "station," which expense averages about fifty cents per sheep, and that the wool should be his net profit. That being so, the squatters of these four colonies have an annual net income of $11,000,000.

—Two enterprising Yankees have just started a drove of horses from Los Angeles, Cal., for the eastern world. They are to be driven 850 miles to Salt Lake, and then put upon the cars for the East. They cost the Yankees about $20 a head. If this venture succeeds, an unlimited supply can be had from the same quarter; one single rancheman having 3000 more to sell. It is but a few years since droves of horses were taken across the plains from Illinois to San Francisco.

EFFECTS OF PLASTER ON THE SOIL.

WHAT effect has Plaster, or Gypsum, on the soil, after having been used for many years? Will it exhaust the soil? If so, can fertility be restored by other agencies? In N. Brunswick, not far from Fort-Fairfield, there is a mountain of gypsum of superior quality. This rock is taken to our mills and ground, and is used quite extensively as a fertilizer by the farmers of Northern Aroostook, producing great results, increasing the crop of grass and grain two or three fold. Yet some abstain from using it, fearing it will ruin their land in the end.

Lyndon, Aroostook Co., Me., 1870. H. D. C.

REMARKS.—The question asked in the opening of this note is of too much consequence to be answered by one or two brief remarks. Plaster has become an article of importance for agricultural purposes. Hundreds of tons are annually used in the vicinity of Boston on various crops, but especially for clover, and potatoes. We have seen old pastures covered with a luxuriant growth of white clover, by a simple application of ground plaster of about fifty pounds to the acre. And this has occurred where scarcely a head of clover had been seen before for many years. Scattered upon potatoes before covering the seed, it keeps off worms, prevents decay, and essentially proves the crop in other respects.

In order better to understand how, and to what extent, plaster affects the soil and the crops, its composition should be clear to the mind.

As we understand it, plaster or gypsum, is lime in combination with sulphuric acid, or what is familiarly known as oil of vitrol.

The efficacy of plaster will depend much upon the *kind of soil* to which it is applied. On clayey soils, which are stiff and impervious to the rains, the plaster would be retained for a long time without being much affected; while it would operate beneficially on soils that are light, dry, and sandy, or open, as they soonest admit the rain water which dissolves and conveys it to the roots of the plants.

In some cases, plaster will not produce any effect, on account of the soil being already sufficiently supplied with it, or the soil may be deficient in other substances upon which the plaster must act in order to make it productive. As an illustration, we may add that red clover requires several substances to perfect its growth, and among them potash. If this is lacking, the others would lie inactive, so far as the clover is concerned, and no clover would grow.

We have observed that different writers ascribe the fertilizing properties of plaster to different qualities. While Baron Liebig gives it to the fact that it possesses the property of fixing the ammonia in the rain water, Davy ascribes it to the sulphur which it contains, and Chaptal, to its regulating the solubility of salts in the soil. Dr. Muse, of Maryland, many years ago started the theory that the chief efficacy of plaster arose from its tendency to produce phosphoric acid.

It seems to be clearly ascertained now, however, that "while it acts directly as nutriment to a certain class of plants, it also acts indirectly by fixing the ammonia contained in the atmosphere, and in the dew, rain and snow, and thus furnishes additional food of a stimulating nature to the same plants."

It has been stated by some that leaves of plants serve not merely as lungs, but as mouths also, absorbing the food supplied by the atmosphere, just as the fine fibrous roots collect the food supplied by the soil. This seems to be proved by the fact that plaster acts more beneficially upon clover when its leaves are fairly expanded, than it does when applied directly to the soil.

In order to be clearly effiacious, the application of plaster must be alternated with animal manure; otherwise, the fertility which it produces will not be sustained, and in a few years of repeated plastering, the product will descend lower than before. Therefore, it should not be too often repeated upon the same soil, as most soils require a change in manures, as well as in crops, once in five or six years.

We are glad our correspondent asked the question, because we observe a tendency to make a too free use of a good thing.

SUCKERS from the base of fruit trees are most effectually removed when in full leaf.

EXTRACTS AND REPLIES.

CHEESE FACTORIES.

Will you or some of your readers give me some information regarding cheese factories. We live in a good dairy town, but on account of help being so scarce we think the labor might be done cheaper at a factory. What we want to know is the capital required for a hundred cows, the usual way of conducting factories, &c. H. M. FALES.

New London, N. H., June 27, 1870.

REMARKS.—No one can expect success in a cheese factory, or any other factory, or, indeed, in any business,—even in milking a cow,—until he learns how by experience. Still some general idea of the business may be obtained from books, and papers and speeches. In the first place, Mr. Willard, who is authority in these matters, says that his experience shows that a cheese factory with less than 300 cows will not pay expenses. Still there are quite a number in the country with from 100 to 250. He puts the cost of buildings for a factory at $3000 to $10,000. Machinery for factory with 600 cows at $1200 to $1500. Skilful workmen command high wages,—men from $800 to $1200 and board for the cheese season, as superintendents; women are sometimes paid $100 per month; ordinary skilled help, less, but still good wages. Four or five miles he considers as far as milk should be carried, and puts the average distance in New York at not over one mile and a half. About ten pounds of milk is allowed for a pound of cheese. Large factories charge three-fourths of a cent a pound for manufacturing and care of cheese till sold. Smaller ones charge one cent, and very small ones two cents a pound. Some of the factories claim the whey as a perquisite; at others it is delivered to farmers in proportion to the milk furnished; in others it is fed at the factory to hogs belonging to those who furnish milk; and recently, butter is made from the whey at a few factories.

Mason's Factory, Richmond, Vt., with only 80 cows; Hill Factory, Middletown, Vt., with 100; Valentine's, Tinmouth, Vt., with 125 cows, are mentioned in the last report of the American Dairyman's Association. Perhaps some one connected with these factories will answer more fully your inquiries. We should be very happy to publish such information.

METHOD OF GETTING HAY.

By a little more careful reading of my article, on "A method of getting hay," "Inquirer" will see that I did not *advocate* the method, but was really as much of an "inquirer," as Inquirer himself. I was disappointed that the editor did not make a few remarks on the subject. I shall try the experiment only on a limited scale, and with care.

I would state the man's name alluded to in my first article, were it not for the fact that I alluded to his personal circumstances, which are not to be thus advertised. This allusion, and the one concerning his stock, were not made as arguments for the method, but as reasons why I thought we might properly investigate the subject.

His time of cutting hay is not as late nor perhaps as early as some. I think he finishes haying before the 4th of July. He has grass which yields from one to two tons per acre of hay, and enough to keep (as he does) eight or ten head of stock. The looks and smell of his hay are all right.

The hay being cut with a machine, no spreading is required nor many workmen. What he does in the forenoon, besides turning, I don't know. I presume it would hardly be necessary to do needless work in order to keep the time occupied If so, a game of "odd-or-even" might answer the purpose, and be less wearing than heavier exercise. However, perhaps Inquirer will see that the afternoon work is not so great as would seem. What is mowed Monday, P. M., is not raked—it only *lies*. Tuesday, P. M., it is raked and got in, and more hay mowed for Wednesday. I have always cut my hay in the forenoon, and *raked*, *cocked* and *trimmed* in the afternoon,—the hay cut the day before being raked and secured,—notwithstanding which, we of course admit, the work is more irregular than by the old way.

I have an article cut from a FARMER of July or August, signed K. O. in reply to remarks of S. Edwards Todd, before the American Institute Farmer's Club, New York city. Mr. Todd argues that hay which heats in the barn becomes mow burnt, dusty and mouldy. Mr. K. O. has repeatedly put scarcely wilted hay in the mow or stack, cut when in full blossom, and mentions instances, with good success. He refers to a man who houses all his hay the day it is cut, and has the best, judging from smell and looks, anywhere seen. K. O. advocates cutting hay when entirely free from external moisture, and housing when scarcely wilted, and seems to advocate the doctrine that a pound of sap is less injurious than an ounce of water. He thinks it better adapted for milch cows than for team feed; for the latter he would probably cure more. I have lost the paper containing my article, but belive I made a little mistake in this: I think the man I spoke of gets his hay in, and does his mowing *afterwards*, as a too early mowing would cause the hay to blacken with dew. All hay ought to be got in, if not fit before, soon as possible after noon, and if the time occupied is not too long, the machine can do a good piece of work then. I would be very thankful to the editor for his opinion on the subject, as I am as much in need of enlightment as our Essex county friend, who will please bear in mind that K. O. and others not only consider it unnecessary to dry out much of the sap from grass, but consider that the heating of hay in the barn, caused by the sap, not by water, helps make the hay. JOHN.

Franklin, Mass., June, 1870.

REMARKS.—This whole subject of making hay was very fully discussed in these columns last winter in the reports given of *Farmers' Conventions* in this State, Maine, New Hampshire and Vermont.

Our own practice in curing the grasses is very nearly that which our correspondent describes above as his practice. We cut the grass just at night or in the morning; wilt it as thoroughly as we can until one or two o'clock, then cock and put caps on. The next day open after the dew is off, turn twice before 2 o'clock, then get in. This course is for favorable weather.

In making clover, cut as before stated and wilt, then carefully gather into cocks, put on caps and let it remain two nights even if the weather is favorable. Open the cocks, shake out heavy

bunches, turn once, then get it in. Under this treatment, the heads and leaves adhere, the stems are not brittle, but made, "cooked," as it were, and retain their valuable juices.

A new mode among us, is that of cutting the grass, allowing it to wilt for a few hours, and then packing it away from the air as much as possible.

We have no more doubt that hay is preserved in this way, than we have that it is preserved in any other way. It is testified to in every direction, and barns full of such hay, as sweet as a nut, may be seen by those who will take the trouble to go to them.

This process requires that a pretty large amount of hay shall be placed in a compact form, and in a great measure excluded from the air. Few of us have such conveniences. Our barns are divided into many spaces where currents of air come and go at will. But because we have not so cured hay ourselves, we do not think that it cannot be done. The evidence placed before us at the Convention in Maine, last winter, was perfectly convincing that hay is successfully preserved in that way, and can be by any of us who have conveniences for so doing.

FRUIT TREES GNAWED BY MICE.

Having suffered very much from the effects of mice for several years, I would like to ask the readers of the FARMER how to prevent mice from destroying our apple trees, by eating off the bark in the winter? Will tar, painted over the bark late in the fall prevent it, and if so, will tar injure the trees?

I tramped the snow all around them last fall, and put chip manure around the trunks in small sharp piles, eighteen inches high, but neither had any effect. I have lost, the last two years, nearly one hundred trees, some of them very valuable. Answers to the above questions will be thankfully received. HIRAM FRENCH.

Eaton, Compton Co., P. Q., June, 1870.

REMARKS.—This subject was discussed in our columns last year, but no specific remedy was suggested. Offensive matter applied to the tree, if harmless to the bark, is liable to be washed off by rains and snows. And we much doubt whether any other means of equal cheapness and efficacy can be suggested better than plenty of cats and a good mound of earth. Let one or two or more mother cats range the orchard during the fall,—cats that are dependent on their own industry for the support of families,—and the mice census will show a great decrease by the time the snow comes. And then, late in the fall, clear away the grass and weeds from around the trunk and if the soil affords tolerably easy digging, throw up a pile around the trunk of clear earth at least eighteen inches high, and if the snows are not much deeper in Canada than here, we think the trees would be pretty safe from the mice. If the soil of the orchard is hard or rocky, a cartload from the nearest bank will answer for several trees.

Tar might answer, but we should fear it would injure the trees. When applied to prevent the ascent of the canker worm grub, paper or cloth is generally first tied around the trunk. A paint of soot and milk, compositions of tobacco, sulphur, assafœtida, hen or pigeon manure, with mud or clay to give body and tenacity, are recommended by some book-farmers. But we have had no experience with them.

STAR-NOSED MOLE.

As you seem to be authority on insects, perhaps you can tell me what animal the enclosed skin came from. My cat caught it in my cellar. Its fur is something like a mole, but its teeth were like a cat or weazel. I never saw anything with such a nose before. The feelers were eighteen in number. None of my neighbors who have seen it can tell me what it is.

We are having uncommonly warm weather here now. Corn looks nicely. Early sown grain is doing well, while that late sown looks very poor. No one estimates the hay crop any more than three-fourths the usual quantity. LEWIS BEAL.

North Fairfield, Me., June 25, 1870.

REMARKS.—The skin come from a star-nosed Mole—*Condylura cristata*, of the books. The American Cyclopædia says the star-nosed mole of North America has the end of the nose surrounded by 22 movable fleshy filaments, radiating in the form of a star, which serve as delicate organs of touch; feet five-toed; tail moderate, thinly haired.

This variety of the mole is quite rare in this part of New England. Yours is a larger specimen than most of those we have seen described, and perhaps from old age or some casualty had lost some of its feelers.

SUCCESSFUL EXPERIMENTS IN HAYING.

Mr. BROWN:—You remember some twelve years ago you had the honor to act as one of the Trustees of the State Reform School at Westboro', and, with one of your associates, had the principal management of the farm. You saw fit to employ me to execute your wishes and direct the farm work as best I could. The great meadow of blue joint had always been a trouble and was considered of little value, except for a litter. It was always left for the last work of haying, when the grass would be lodged, tough and hard to cut, and still harder to eat. With your permission, I cut it in the early part of June, and again in September, with so much success that our example has been followed, to the present day, and the old, worthless meadow now affords the State a large amount of excellent fodder. Cutting twice has not injured, but improved it. The present superintendent told me yesterday, that he measured and found some of the grass six feet long.

Now I own a little lot of the same kind just below. Most of the State's hay is in the barn, and all of mine, and in what I call the *best order*.

I took my pen at first to tell you how I cure my hay. I don't like smoky hay; but the less drying the better, if it can be kept bright. I had a few tons of old hay left, and I thought it worth more than the high price of last spring for me to keep. So we began cutting the meadow, and with little, say half drying, began to cart it home and put a layer of the old hay, and then one of the new, with a small sprinkling of salt; then old hay and new, and so on to the end. The benefits are less risk of bad weather, saving of time, and greatly improves the hay.

Now, friend Brown, I am almost seventy-two years old. An accident to my foot has laid me aside and made me a great sufferer for the last six months. My life is barely spared. I can just hobble a little on crutches; yet, *perhaps*, my experience may do some one some good, and if you think so, this is at your disposal. If you will call and look at my hay, and see how bright and cool it is, and don't say it looks full of promise for a full pail of milk next winter, I will take you into my carriage and carry you all over the State farm (*you open the gates for us*), back to supper and give you a box of strawberries for the good woman. Your friend, ELMER BRIGHAM.

Westboro', Mass., June 20, 1870.

REMARKS.—It gives us pleasure to hear from our old friend again, but mingled with regrets that his activity is somewhat lessened by a painful accident. But impeding his locomotive powers, does not seem to check the activity of his mind and observation. We very well remember the wide meadows, and our anxiety that they should become sources of profit, instead of the home of frogs and almost worthless grasses. That accumulating years may sit lightly upon our friend, and a clear faith and calm serenity of mind cheer the pathway of his life, is our heartfelt and sincere wish.

HORSE FEVER, WITH DESTRUCTIVE CHANGES IN THE BLOOD.

I have a horse, which on being turned out to grass, swelled up all around the throat and jaws, and remained so a few days; after which the swelling left the throat and settled into the lower part of the head, filling the mouth very full and hard, so that she eats with great difficulty. She had the horse distemper last winter. Do you think it the effect of that remaining in the system, or has she eaten poison? She is apparently well in every other particular. She eats as much as she can, but grows poor. Her eye is bright and clear.

If you can inform me in regard to this complaint, you will confer a great favor on a poor boy who works hard and is unable to lose the value of the horse. A. C.

Woodstock, Vt., June 24, 1870.

REMARKS.—From the frequency of such cases, this year, in horses that have had the distemper, we incline to the opinion that the trouble in this case is the result of the distemper, and we refer our correspondent to an article by Prof. Law in the FARMER of May 7. In addition to which we copy from Dr. Law's answer in the New York *Tribune*, to an inquiry in relation to the treatment of a horse which was, we judge, in about the same condition of that of our Woodstock correspondent. He says, when the tongue and pharynx are affected, as in the above cases, it may be occasionally sponged with a lotion of one part of muriatic acid mixed in 15 parts of water, and applied by means of a sponge firmly tied to the end of a whalebone staff; or in place of muriatic acid, a solution of an ounce of carbolic acid in a pint of water may be employed. Similar lotions may be applied with active friction over the swellings when they appear externally. Stimulating febrifuge medicines, such as two ounces of sweet spirits of niter, may be given thrice daily to support the animal in its great prostration, and for the same reason one drachm of iodide of iron and four drachms of powdered gentian may be given daily. Half-drachm doses of carbolic acid, given twice daily, have appeared to be of benefit in counteracting the zymotic changes in the blood. The diet throughout must be nutritious and laxative, and special manifestations or complications of the disease must be combatted as they appear. Thus, colic, bleeding from the nose, bowels, or kidneys sweating of blood from the engorgements in the skin, cracks and unhealthy wounds in the bends of the joints, mortification of the skin in patches, imminence of suffocation from swelling of the nostrils, engorgement of the larynx, or lungs, &c., have to be promptly met in different cases."

POKE AND HELLEBORE FOR THE CURRANT AND CRANBERRY WORM.

Mr. Ormsby, in your last issue, gives an account of his successful use of a decoction of Poke root, in exterminating the currant worm. We have no doubt of the truth of his statement.

In your remarks following his statement, you say that "white hellebore, carbolic acid, and preparations which have been used, are somewhat costly, and some of them rather dangerous poison." Now I wish to inquire if the American Hellebore, which is sold at the shops under the name of White Hellebore, is not the same thing as Indian Poke, Poke root, and Swamp Hellebore? There can be no doubt about this. So that whatever danger attaches to the use of the Hellebore, attaches to the use of the Poke root. The change of name, we take it, will not alter the nature of the thing. A very small quantity of the powdered Hellebore or Poke root is sufficient. With a half pound of it, dusted in the morning, from a tin box, with a lid perforated with holes, we completely expelled the first crop of worms from a long row of currant bushes. Now, June 25, a new crop of worms is beginning to appear. We shall repeat the same treatment.

Tell "Farmer's Daughter" to try powdered Hellebore on the cranberry maggot; or if she prefers, a decoction of Poke root. R.

Concord, Mass., June 25, 1870.

REMARKS.—The common Poke or Garget, with dark-purple juicy berries—*Phytolacca decandra*,—which we supposed Mr. Ormsbee used, belongs to a different order of plants from Indian Poke, or Swamp Hellebore,—*Veratrum viride*,—from which the American Hellebore is made.

TOBACCO.

The tobacco crop has seldom been in so forward a state as it now is at this season. Ten years ago we had many growers who contended stoutly against transplanting before the middle to the 25th of June, but I notice that these same growers are very apt to set earlier now, if the plants can be obtained in season. The present year has been a very favorable one for the production of plants. In fact the effort was to get the land fitted for the plants, rather than to wait for the plants. About the same amount of land is planted to tobacco as last year, perhaps a little more. The amount grown in Western Massachusetts, is about all that can be conveniently grown here, unless we contrive some way of increasing the amount of manure. Where commercial fertilizers are used too freely, the leaf is not so good; it does not handle as well,—feels harsh and stiff.

We finished setting the 9th of June this year. In 1867 we did not begin to set until the 18th, and finished the 27th of June, and the part set last was cut August 26th, lacking one day of two months, and was a fine crop.

We have had very little trouble so far this year, from black worms; but we must not crow until we get out of the woods. It isn't too late yet for the pests to cause us much difficulty.

In hoeing I do not care to disturb the roots of the plant much. I have sometimes thought that some men injured their crop more by hoeing and digging so close to the plant, than they would have done to let it entirely alone, except simply removing the weeds. I am in the habit of sowing about 500 pounds of Peruvian guano to the acre, at the time of the third hoeing, and think it pays well for the outlay. TOBACCO GROWER.

Whately, Mass., June 26, 1870.

MULCHING TREES IN FRUITING.

An article in your last paper from the New York *Tribune*, on "Mulching bearing Fruit Trees," reminds me of a fact which I have intended to communicate for your paper.

Last year, in a pasture where some colts were, a sweet apple tree was in full fruiting. The fruit being of higher value because of scarcity, I desired to save the wind-falls. It was upon quite dry ground, and much of the fruit usually fell off early; although it was a fine-flavored apple which would keep until mid-winter. I had heard reports of their keeping until nearly summer.

There were grey birch trees in part of the same pasture, and to save the apples from the colts birches were cut in August and hauled whole and put under the apple tree, enough to bar back the colts. Drought did not seem to affect the apples; but they kept on growing, and stuck to the tree. Very few indeed fell off, even when there was severe wind. About the first of October it was difficult to pick them off, they adhered so firmly. They had also grown much larger than ever before since the tree came into my possession. They kept finely during winter, and in this month (June) I have eaten some of them, still in excellent flavor. This is to me very suggestive, and I pass it to you for the FARMER.

The grass grew under the birches and rotted there, keeping the surface of the ground moist. Will not others try it? A. G. C.

Lee, N. H., June, 1870.

TIME TO CUT OATS FOR FODDER.

As I have four acres of very promising oats, which I shall cut for fodder, I wish you would tell me at what stage of their growth they should be cut.

I have been in the habit of cutting my grass too late, but have been mending this year, by cutting when it is getting well into blossom; and I have been thinking no better time can be had to cut the oat crop, or Hungarian grass, barley, millet, &c.

A. J. CARTER.

Woonsocket, R. I., June 24, 1870.

REMARKS.—Our rule has been to cut oats for fodder just as the grain is formed, and before it will show any "milk," as it is termed, by pressing it between the thumb nails. But the clean straw that is sometimes left in the crib has led us to think it was not cut early enough.

FOOT DISEASE IN CATTLE.

I have had several cows that were affected, I think, like friend D. K. W.'s cattle, mentioned in a late number of the FARMER. I have succeeded in curing mine by a single operation of cleaning the foot by scraping with a stick, so thoroughly as to make the blood run quite freely. To make the animal stand still during the operation on the hind feet, I chain it to a post, then put another chain around the leg above the gambrel joint; two men can then take hold of the chain and hold the limb sufficiently still for a third man to clean the foot. T. B.

Haydenville, Mass., June 22, 1870.

KING BIRDS DO KILL BEES.

Experience teaches me that king birds do destroy bees. I have killed several of them lately, and on opening their stomachs found in each from six to a dozen bees. I have also watched them and seen them catch bees when flying about.

Our crop prospects are quite flattering here in the Connecticut valley. Corn is looking well, and is forward. Some farmers have already commenced haying. GEORGE A. RUSS.

Hartford, Vt., June 25, 1870.

AGRICULTURAL ITEMS.

—D. McMillan, of Xenia, Ohio, recently sold sixty-nine cows and bulls of pure blood Shorthorns for $63.326; or $902 on an average. The cows averaged $1040, and the bulls $483.

—The cost of fencing a quarter section of land in California is more than five times the amount charged by the Government for the land, owing mainly to the scarcity of timber.

—A correspondent of the *Prairie Farmer* mentions the loss by a neighbor of 150 nice Leghorn fowls by feeding them ground bone, purchased for that purpose. It is supposed that there was something poisonous in the bone.

—The *Canada Farmer* says the Provincial Board of Agriculture of Nova Scotia have decided to import $10,000 worth of pure-bred stock by the 20th of September. It will consist of horses, Shorthorns, Ayrshires, Devons, Herefords, Alderneys, sheep and swine.

—A lady correspondent of the Ohio *Farmer*, after having tried a great many processes for preserving eggs, finds the best way is to grease them all over thoroughly and keep them in a cool place, but not damp. Place the eggs after greasing, small end down. The French rub eggs with fresh butter. The Russians pack them in crocks small end down, and pour melted tallow over them.

—Young fruit trees or shrubs which were transplanted last fall or spring will thrive better and are less liable to suffer from the effects of moving when the ground, as far as the roots extend, is mulched with salt hay, straw, long manure, or charcoal dust. When the last material is used from a peck to half a bushel to each tree will be enough spread evenly around the body of the tree.

—At a late meeting of the Little Falls, N. Y., Farmers' Club, Judge Graves of Herkimer, stated that he soiled a horse from early in July until the grass ceased to grow in the Fall, from one-eighth

of an acre of land. The land was in good condition and was seeded to orchard grass. Each morning while the dew was on he cut enough to last until the next morning. Besides the grass, he fed but one peck of oats a day.

—Joseph Harris, Esq., in his "Walks and Talks on the Farm," in the *American Agriculturist*, says: "No matter what branch of farming we discuss either theoretically or practically, we are brought back to the old, old story, that, as a basis of successful operation, we must have dry, clean land. Everything must be directed to this one point. We can do nothing without it; we can do everything with it."

—Charles Carlisle of Woodstock, Vt., writes to the New York Farmers' Club that he experimented last year with ashes on corn, to which he applied a shovelful of rotten manure in the hill. Fifty hills were left without the ashes; a handful being put with the manure on the other part of the field. He weighed the product on the fifty hills unashed, and a corresponding number of hills with the ashes. The gain on the part ashed was estimated to be equal to a bushel of corn for each bushel of ashes used. He asks, is it not possible that the corn is benefited by the mixing, if we cover with the mellow soil to receive the liberated ammonia?

—Strips of zinc half an inch wide and two and a half inches long, written on with an ink, made of six grains of sulphate of copper, mixed with one ounce of water; dissolve and add three grains of sal-ammoniac and twenty drops of sulphuric acid, all to be had of an apothecary, is said by the *Germantown Telegraph* to be the best style of fruit-tree label that he has found during twenty-five years experience with labels of many different styles. Copper wire, No. 17, 18 or 19 must be used for fastening the labels upon the trees, and be cut of sufficient length to allow for growth of the tree. Such ink if well made and put on will last twenty years.

Bog-Meadow Hay in New England.—In one of Mr. Greeley's articles in which he is telling the readers of the New York *Tribune* what he "knows of farming," he says, "Fifty years ago, I judge that the greater part of the hay made in New England was cut from sour, boggy land, that was devoted to grass simply because nothing else could be done with it. I have helped to carry the crop off on poles from considerable tracts on which oxen could not venture without miring." Mr. Greeley spent his boyhood in New Hampshire and Vermont, the same States in which we learned much of the little that we know of farming; but we cannot agree with him in this estimate. In the sections with which we were acquainted we should estimate the proportion of hay from sour, boggy land would not exceed one ton in twenty-five of the whole amount cut. The hill sides which were then productive in clover, herdsgrass and redtop, are in many cases now overgrown with weeds, bushes and wood, and the farmers who, fifty years ago lacked barn room for their upland hay, are now compelled to resort to the sour, boggy land for the coarse fodder which was then considered hardly worth cutting.

AMERICAN DAIRYMEN IN ENGLAND.

From a letter dated Longford, England, May 30, 1870, written by Mr. C. Schemerhorn, one of the American cheese-makers who have gone to England to introduce the factory system there, and published in the *Utica Herald*, we make the following extracts:—

After my brother arrived he took charge of the factory at Derby, and I struck out for Longford, 10 miles west of Derby, where the other factory was under way, which was completed in a short time, and commenced operations the 5th of May. The building is a new one, thirty-two feet by ninety and two stories high; make-room sixty feet long. It has the drop floom and gates in the vats, saving the labor of dipping the curds by hand. There are twenty-five patrons, and I am making twenty-two cheeses a day, ten inches deep and pressed in a fourteen inch hoop. I have now in the curing room upwards of 500 cheeses in number. It astonishes all to see how fast they accumulate. It is more than was expected. I color the cheese some, and use Nichol's fluid extract of annatto, which takes the preference in this country, and ought to in America. It is free from sediment, so there is none to settle in the bottom of the vat while the milk is coagulating, to leave a streaked color in the cheese after curing. This annatto cannot be shipped in baskets, but comes in kegs or casks, and is a paste before preparing, and is the pure annatto, while it has to be reduced to a great extent to allow shipping in baskets. It takes but a small quantity to color a large amount of cheese or butter, and gives the best shade desired.

England is suffering for rain. The grain is backward on this account, and unless rain comes soon it is anticipated the crops will be light. The grass has not suffered as much, although crops in some sections are turning brown and are getting dry.

Saturday, the 21st, was the warmest day of the season. Thermometer stood at 83°, while the 22d, in the afternoon, it stood at 58°. The sky is generally cloudy, smoky or foggy. In the evening the light of the sun fades away slowly. A few evenings ago I was reading at 9½ o'clock in the twilight, while in the winter time I have been told darkness commences at 3½ o'clock in the afternoon, especially in London, which is a very smoky city.

The cattle here are good size, and chiefly short-horn. After being in the dairy for three or four years they are fatted for beef, (that is, in this section.) They fat very quickly and make good beef. England cannot pro-

duce enough beef at home. A large quantity of meats come from Australia, prepared there and shipped here. This section was visited by the cattle plague several years ago, but not so much as other sections, although some dairies of forty cows were attacked with it, and they were all slaughtered to get rid of the disease.

The cattle here now are troubled with the foot and mouth disease, which is extremely contagious. The cows first show signs of it by a very quick decline of milk, smacking their lips and drooling from the mouth. The tongue and the mouth are covered with large yellow blisters, which break after a couple of days. The eyes are dull, and the flesh hot. The animal dislikes to eat on account of the soreness of the mouth. Occasionally the breaking out is on the feet, and the hoofs drop off at times; (when the sheep have it, it most generally deprives them of the hoofs.) The best remedy is gruel of wheat bran mash (some put salt in the mouth) and grass cut fine. The better condition you can keep the animal in the sooner in will recover. After an animal has had it once it is likely not to have it again for several years.

TO BREEDERS OF HORSES.

I am induced to write a few lines in answer to the frequent inquiry which is made by letter and otherwise, as to the influence of unsoundness in sire or dam, especially of the dam, upon their produce. I am aware that the subject has been treated of often, but fails to be considered in the proper light by breeders among us.

My experience and that of others with whom I have conversed, is that more than half of the mares bred are quite unfit to produce first class progeny. I believe more care is taken to select sires, but if a mare has been a good one or not, and has become foundered, or spavined, or wind broken or otherwise unfit for market, men believe that something is saved to breed from such animals, and expect to be repaid for the physical disability under which the dam is laboring, by reproducing a foal liable to the same weakness which caused the injury to the dam. And these injuries become fixed types, as the strain upon the animal economy is greater in any given direction through a series of generations. Thus dams are selected which have broken down, and are no longer suited for active labors or the turf.

This course pursued for ten years longer as it has been for the last ten years in Maine, and we may bid good bye to the profit and pleasure of breeding the best horse that goes to market. You who spend five years of care and necessary expense to raise a colt fit for the harness, ask yourselves whether you are willing, when selling an animal, to take a doubtful note for his value. There is as much reason in that, as in expecting an animal constitutionally defective, to give you a satisfactory progeny. I am not speaking at random, or discussing physiological science, but offering a warning which careful investigation in my own practice has made certain. I can point out to any person who desires to make observation, a large number of mares of constitutionally light muscle, which have almost invariably produced colts that have broken down. And this is more seen when the breeding of the mare is so good, (with the exception of the difficulty in question) as to admit of her determining the general characteristics of the progeny.

Another point is also of much importance, to those who wish to breed to a given qualification. Many men expect to breed a trotter by coupling a mare which has no lines of fast blood in her pedigree, with a fast horse. Experience proves that this is rarely done at the first cross, but may be done by two or three in-crossings. Therefore it is necessary when we wish to breed speed, that the dam and sire, both be found in a line of speedy animals. To effect this, I cannot but urge in-breeding much more than is now done, especially the second generation to the grandsire, and the second generations to others, whenever it is desirable to intensify or increase any characteristic.

Will not some of our young breeders take up this suggestion in in-breeding, and give the public the advantage of their experience.—*T. S. Lang, in Maine Farmer.*

For the New England Farmer.

MEDICAL TOPICS.

BY A MEDICAL MAN.

The diseases of most frequent occurrence in the latitude of New England, during the months of July, August and September are Diarrhœa, Cholera and Dysentery:—Of these we purpose to write briefly, and in the order here indicated.

Diarrhœa.

This term literally signifies a *flux* or looseness occurring from any portion of the body; but as commonly employed, it denotes a morbid frequency of the discharges from the bowels, the dejections being at the same time liquid, or morbidly soft, and frequently otherwise altered in character. When the dejections consist of feces not much changed in character, but simply liquid or semi-liquid, the diarrhœa is said to be *fecal, feculent, stercoraceous* or *simple*. When, from the yellow or green color of the discharges, bile is supposed to be present in larger quantity than usual, the affection is called *bilious* diarrhœa. When the matter discharged is very watery, consisting mostly of serum, the diarrhœa is called *serous*. When the dejections consist principally of undigested food, we have a case of *lienteric* diarrhœa. When the discharges are chiefly mucous or slimy, the diarrhœa is said to be

catarrhal or *dysenteric*. When the matter dejected contains fat or oil in considerable proportion, the disease is called *adipose* or *fatty* diarrhœa.

Diarrhœa may be a symptom of inflammation of the intestines, or of certain diseases of the bowels incident to consumption, typhoid fever, or some other disease; it may be an element of cholera, dyspepsia, and certain cases of colic; or, it may be what doctors call an *idiopathic* disease—that is, a disease of itself—a primary disease—in which case it is usually the result of the action of undigested food, or else of the depressing and relaxing effect of extreme heat.

The treatment of diarrhœa should vary according to the circumstances of individual cases. If the affection be *symptomatic*, that is, if it be only a symptom of some other disease, the parent disease or *primary affection* must be attended to *first*, for there is little use in efforts made to stop the *effect* while the *cause* is suffered to continue. Nevertheless, in this form of diarrhœa it is not only useful, but absolutely necessary, sometimes, to administer anodyne and *astringent* medicines for the purpose of relieving pain and checking the discharges, although the effect be not permanent. Among the various remedies employed for this purpose, opium and its several preparations occupy the front rank. One fourth of a grain to two grains of opium; or, ten to forty drops of laudanum; or, a teaspoonful to two table spoonfuls of paregoric; or, five to fifteen grains of Dover's powder; or, one eighth to one fourth of a grain of morphia, are the usual doses for an adult; for children, the doses must be greatly lessened, and in proportion to the age. As a rule, however, these articles are not safe remedies for domestic or family use, and, with the exceptions of paregoric and Dover's powder, should never be employed except as prescribed by a competent physician. The safer remedies for common use, are tannic acid or "tannin," gallic acid, white oak bark, blackberry root, kino, catechu, logwood, cranesbill, or some other one of the many valuable astringents which have a place in the *Materia Medica*.

But anodynes and astringents, such as opium, tannic acid, oak bark, etc., should be used only as *palliatives*, except in cases in which the discharges are produced or continued by debility and muscular relaxation. If irritation caused by improper food has occasioned the trouble; if the discharges are produced by an effort of nature to rid the system of a redundancy of bile, or some other offending material; or, if the diarrhœa be an element of active inflammation of the bowels, such things as we have mentioned should be used cautiously, if at all; and in many cases they are quite inadmissible. The transient diarrhœas caused by overloading the stomach, improper food, a redundancy of bile, &c., do not, as a rule, require much medicine. Rest, with abstinence from food and drinks for twelve, twenty-four or thirty-six hours, will generally effect a cure. If the contents of the large intestines be not expelled spontaneously, which may be inferred from the entire absence of solid matter, a cathartic of Epsom salts, rhubarb, or castor oil, may be administered with advantage; or the following preparation, which is a favorite with many, may be employed:—Take of powdered rhubarb one ounce; saleratus, or bicarbonate of soda, half an ounce. Mix, and steep a teaspoonful of the powder in a gill of hot water for half an hour; then strain, and add sugar to suit the taste—also a little essence of peppermint or cinnamon. This dose should be repeated every hour, until it operates as a cathartic. Other mild cathartics may be used instead of those mentioned, if preferred. After the intestines have been thoroughly cleared, mild astringents and anodynes may be employed, if the disease continues.

If active inflammation of the bowels be present, or if the diarrhœa be dependent on or connected with ulceration of any portion of the alimentary canal, or if it be a complication with any organic disease, the case should be placed in the care of a skilful and judicious physician.

A proper attention to diet is important in all cases of diarrhœa. During the first day or two all food should be avoided, or nearly so; and when taken it should be composed of such articles as are most easily digested. Rice meal gruel, farina gruel, arrow-root gruel, wheat flour gruel, milk with bread, crackers or rice, and sometimes tender meat, such as chicken, lamb or beef, may be taken without injury. A moderate quantity of food, taken at short intervals, is generally advisable, rather than a full meal once or twice daily. Drinks should be taken sparingly. A little rice water; an infusion of good black tea, or of raspberry, or strawberry leaves; bread or barley coffee, or even good Java; iced water in small quantities;—these are the best drinks, in most cases. Sometimes a little old cider, port wine or brandy may be taken without harm, and even with advantage; but inasmuch as it is difficult to obtain pure wine or brandy, it is safer to let them alone. Much benefit has sometimes been experienced from wearing upon the abdomen a compress of *dry flannel*, or a *wet compress* of cotton or linen cloth, covered by a dry girdle or bandage.

The Bee Moth.—Now is the time to be on the look out for the moth-worms. During the next two or three months they breed fast, and every one destroyed now will save you the trouble of destroying hundreds a little later in the season, and besides, save you much loss. The best time to get rid of them is in the morning, when they will be found generally upon the bottom board of the hive. Do not neglect it.—*Agriculturist*.

A JUNE VISIT TO AN OLD FARM.

Beauty of the country—Rural tastes of a friend—Farmers' Convention in N. H.—Farm of G. W. Lane in Derry—Old friends in council—Stone walls, miles of, and ditches—An orchard waked up—Cabbage, milk, &c.—Exhausted soils revived—Value of example.

RIDE across the country in the "leafy month of June" must be a pleasure to any lover of nature. But taken in such a June as this, when heat and moisture have given a luxuriance of foliage and flowers rarely witnessed, the careful observer will realize an entertainment and instruction entirely surpassing what is usually found in fashionable haunts. These outward attractions were greatly heightened by the presence of a neighbor and friend, the Hon. JOHN S. KEYES, late U. S. Marshal for the District of Boston, who loves *nature* and *riding* as well as old Izaak Walton did "virtue and angling." He finds infinitely more satisfaction in prying into the ways of the wonderful nature about us than into the ways of rogues who operate to deprive the government of its just dues, or who imperil its safety. So with steeds that seemed to enjoy the travel, as we did the cool air and charming scenery, every mile of the way offered topics which were interesting and instructive to discuss.

At the *Farmers' Convention*, held at Manchester, N. H., last winter, Mr. G. W. LANE, of Derry, in that State, took part in the discussions, and attracted attention by referring to the magnitude of his farming operations, as well as by their diversity and their nature. This led me to make many inquiries, and the conversation ended by his extending an invitation to myself, to JOSEPH S. ABBOTT, Esq., of Concord, whose fame as a coach builder is well known wherever coaches are run, and to the Hon. J. D. LYMAN, then Secretary of the State of New Hampshire, and the gentleman who has offered in the New Hampshire State Society, and paid the $100 premium on corn, and now offers a like sum for the present year. My friend made up the quarto, all farmers, and working more or less with their own hands.

Mr. Lane purchased what is well known in all that region of country as the "Old Gen. Derby Place," and which is a very beautiful estate. It stands on an eminence overlooking the country for a circuit of at least fifty miles in every direction, bringing into view the ocean, in clear weather, the Monadnock, Kearsarge, Ragged, Wachuset and Unconoonak Mountains, and from the cupola of the house, the spires in about forty different towns.

The farm consists of some 250 to 300 acres, having a heavy, granite loam soil, full of springs, and originally plenty of stones. The latter have been removed to a considerable extent, and large quantities of them laid up in substantial balance walls, so that now there are between four and five miles of stone walls on the highways.

There are one and a quarter miles of ditches, which are excavated three and a half feet deep by the same width. In the bottom of the ditch—which is all what is called *hardpan*—a duct is formed of substantial stones, leaving an aperture about eight inches square; this is covered with shavings, coarse straw or brush, as compactly as it can be conveniently made, then with small stones for a foot or more, and finished off by returning the earth which had been thrown out, rounding up the surface as much as it is supposed it would settle.

The effect of this drainage upon the soil he describes not only as clearly perceptible, but quite remarkable. An apple orchard which had borne only the most meagre crop of indifferent fruit for many years, brought a bountiful crop of fair fruit the year succeeding the draining. Some of this fruit, now on hand, June 30, is sound, crisp and juicy. He imputes the change to the drainage, as no tilling of the soil had taken place, if we understood him correctly. Quite as beneficial a change was manifest on all the crops, he said, as on the apple crop.

On the 25th of September last, in passing the farm, I noticed a field of cabbage which seemed from the carriage to be excellent. Mr. Lane informed me that he sold this crop about the middle of April last, after keeping

them through the winter, set out in the ground and covered with leaves, straw and brush. The field contained seven acres. This year he expects to raise 20,000 heads.

On one and a fourth acre he got last year 32 tons of rutabaga and mangold wurzel. He keeps 32 head of cattle, among them 25 cows; sold last year 3,630 cans of milk; will increase it this year to 4,000 cans; cuts about 80 tons of hay, which quantity he will probably double in a few years, if his operations are successful.

Mr. Lane states that after purchasing the farm, his neigbors told him that the land was all exhausted by a long process of annually taking off crops in the fields and grazing the pastures, and that they must be very light hereafter until a thorough process of tillage and manuring had been gone into. "But," said he, "this land where those teams are ploughing brought a heavy crop of cabbage last year with only a fair dressing of manure; it was kept entirely free from grass and weeds, and when the cabbages were harvested, the land was clean and froze up so." He stated further, that on a portion of this land he had just cut a fair crop of grass, although nothing had been done to the land after the cabbages were taken off! Upon hearing this statement, I left the party, went off to where one of the teams was ploughing, and found that there was no sward, but the red top was eighteen inches high, and clover in considerable luxuriance, and took samples of each to the other visitors. "This is the land," said Mr. L., "that was pronounced exhausted, but was exhausted like a drowning man, because it couldn't breathe. Now that I have let the breath of life into it, see what it will do!" And it was wonderful what it was doing.

One of his heavy operations since the snow went off is the pulling up of bushes and young trees *by the roots* over an extent of *forty acres!* This was done by ox-power, and done so thoroughly as to bring the whole into a fine tilth by the usual ploughing and harrowing. A portion of this land is to be devoted to cabbage, mangold and rutabaga; another portion, and the seven acres where the cabbage grew last year, to barley, which is to be sown early in July.

It does not seem to me that the barley crop will be perfected before frosts will overtake it; but he states that sixty days of favorable weather will bring it to perfection. He will put in sixteen acres of it.

These operations cannot be indulged in without the outlay of capital which few farmers can command; but they are examples of great value to all farmers. If they prove injudicious, they can avoid them; if successful, they can imitate them, and find a profit in so doing. They should be carefully observed by all who can occasionally see them, so that they may avail themselves of their lessons, either in avoiding or imitating. To me, they confirm the opinions I have long entertained in regard to the importance of thorough drainage, and of high culture in what we undertake.

HARVESTING SMALL GRAINS.

The season for harvesting the small grains, rye, wheat, oats and barley, and the importance of cutting them at the proper time to secure the best results, have not been fairly considered by most farmers.

This is important, whether the crop is to be used as hay or for the grain; both will be materially affected by the condition in which the crop is when cut.

There has not yet, in this country, we believe, been any thorough and reliable experiments made, in order to ascertain the condition of grain which has been cut at different periods of time, or when the grain was in different conditions. To do this so as to be reliable would not only incur cost of time and money, but the aid of very skilful manipulation, such as few persons among us at present possess.

In a discussion on "the influence of the time of cutting on the quantity and quality of the produce of hay and grain," Johnston, in his Elements, expresses a decided opinion that the period at which both hay and grain are cut materially affects the *quantity* and *quality* of the produce.

All farmers have noticed, perhaps, that when radishes are left long in the ground they become hard and woody. The same natural change goes on in the grasses which are cut for hay. So it is with grain, both as regards the straw and the grain they yield. The *rawer* the crop is cut, he says, the heavier and more nourishing the straw. That is, we suppose, after the straw has nearly attained its growth; for it is not to be supposed that straw half grown would be as nourishing as that which had come nearly to perfection. Within three weeks of being fully ripe, the straw begins to diminish in weight; and the longer it remains uncut after that time, the lighter it becomes, and the less nourishing.

On the other hand, he adds, the ear, which is

sweet and milky a month before it is ripe, grdanually consolidates—the sugar changing into starch, and the milk thickening into the gluten and albumen of the flour. As soon as this change is nearly completed, or about a fortnight before it is ripe, the grain of wheat contains the largest proportion of starch and gluten. *If reaped at this time, the bushel will weigh most, and will yield the largest quantity of fine flour and the least bran.*

At this period the grain has a thin skin, but if left uncut, the next natural step in the ripening process is to cover the grain with a better protection—a thicker skin. A portion of the starch of the grain is changed into woody fibre, precisely as in the ripening of hay. It is clear, therefore, that the quantity of starch would be lessened, while the thicker skin would give a larger weight of bran or husk, and a decrease of flour.

After going through many experiments in the laboratory, in addition to facts gathered elsewhere, Johnston says that "theory and experience both indicate about a fortnight before it is fully ripe as the most proper time for cutting wheat. The skin is then thinner and whiter, the grain fuller, the bushel heavier, the yield of flour greater, its color fairer, and the quantity of bran less; while at the same time, the straw is heavier, and contains more soluble matter than when it is left uncut until it is considered to be fully ripe."

It is said, also, that early cut oats are heavier per bushel, fairer to the eye, and usually sell for more money. A week before full ripeness, however, is the utmost that is recommended in the case of oats.

Barley cut in the *striped* state is also thinner in the skin, sprouts quicker and more vigorously.

There are one or two other things to be considered. Where it is intended to feed the straw of these grains to cattle, the early cutting is still another matter of importance. The straw, then, if well cured and housed, is better than meadow hay, and scarcely second to much of the English hay.

Early cutting also lets the sun in to the young grass, and greatly aids its getting established so as to resist the influence of the winter.

A more careful attention to these matters would result, we think, in a very considerable saving to our farmers.

NEW ENGLAND AG'L SOCIETY.

The Premium List of the New England Agricultural Society for their Seventh Annual Exhibition to be held in the City of Manchester, N. H., on the grounds of the Manchester Riding Park, September 6-9, 1870, has been issued. The general arrangement is about the same as last year. The first premiums on cattle are the same now as then, while the second and third are generally reduced. There is also a marked reduction in prizes offered for fat cattle and sheep,—a branch of farming that it seems to us just now to deserve encouragement from the New England Agricultural Society. Very little attention we believe has been given to the subject by the managers of agricultural associations. The state of the meat market and the impoverished condition of our soils, suggest to our minds the expediency of drawing out the experience of the few individual feeders scattered over New England, who have been successful in this business, and who would probably respond to less premiums than are offered to the trainers of trotting horses. We are glad, however, to notice that the fast horse is not quite as prominent on the prize list as heretofore. Two years ago the "Premiums for Trotting Horses" amounted to $6,550; one year ago to $3550; while this year only $2250 of the Society's funds are announced as "Special Premiums for Trotting Horses."

Any person who does not receive a copy otherwise, can have one forwarded by mail on application to Col. Needham of Boston, or Col. George W. Riddle, of Manchester, N. H.

WOOL ON THE PACIFIC COAST.—W. Holly, Esq., Secretary of the woolen Manufacturers Association of the South and West, while on a visit to California, writes at San Francisco to the *Western Rural* that the Pacific coast is a Paradise for wool growers who understand their business. The extraordinary yield of wool, and the rapid increase of stock, without the expense of winter feeding or liability to loss by disease, offer great inducements to capital and enterprise. As compared with last year, statistics show an increase of nearly 3,000,000 pounds, and the condition of the wool this year is very much improved over that of former years. The difference is fully 15 per cent., cleaner than last year; the staple is good, strong, and healthy.

On his way to California, Mr. Holly had a personal interview, at Salt Lake City, with Brigham Young, who expressed great interest in the operations of the "Woolen Manufacturers' Association of the West and South," and signified his intention to contribute samples of wool and specimens of cloths manufactured at his mills, and also promised to encourage his people to follow his example. There are seven woolen mills and two cotton mills in Utah Territory.

The amount of this year's clip of wool in California and Oregon is estimated at 19,830,000 pounds.

THE ST. ALBANS, VT., BUTTER MARKET.—Mr. O. S. Bliss, Secretary of the Vermont Dairymen's Association, in a communication to the *Country Gentleman*, says that there is no market association or organization at St. Albans, but simply a coming together of the people, originating chiefly in the fact that the Vermont Central Railroad, several years ago, adopted the plan of running refrigerator cars for butter one day in a week from St. Albans. Previous to that time most of the butter was bought by agents who went about the country from house to house, but as farmers were

often unwilling to dispose of their butter at the price offered, it was frequently agreed that more should be paid if others got more at St. Albans. The home trade was thus gradually transferred to St. Albans, and Tuesday became market day. As many as four hundred, seldom less than two hundred, farmers' teams are now in town on that day, with both butter and cheese.

WE BROTHERS BROWN.

BY HIRAM RICH.

We sing no songs of camps or kings,
We write no love-lorn story;
We lead no conquering column on,
Yet we uphold its glory.
High, brothers, high,
The banners fly and fly—
We brothers brown—
We two bare hands.

In many a port the hatches fall,
The ship is full and ready—
The craven reef is just a-lee,
Look lively, lads and steady.
Sway, brothers, sway,
Haul and belay, belay—
We brothers brown—
We two bare hands.

In forests deep, awaiting us,
The keels to be are growing—
The sea has never sails enough,
The winds are ever blowing.
Swing, brothers, swing,
The axes ring and ring—
We brothers brown—
We two bare hands.

The prairies roll and bloom and lure
As were the world one meadow;
The clouds are only looms that drop
Their rippling wefts of shadow.
Sow, brothers, sow,
The grain will grow and grow—
We brothers brown—
We two bare hands.

The sea is kind; throw net and line,
It cannot well deny us,—
There's always need upon the land—
The winds were made to try us.
Pull, brothers, pull,
Our nets are full and full,—
We brothers brown—
We two bare hands.

We sow and pull, we swing and sway,
We whirl the wheel of Labor,
We bring the day when king and king,
Will be but man and neighbor.
Sing, brothers, sing,
Our song shall ring and ring,
We brothers brown—
We two bare hands.

For the New England Farmer.

THE ILLINOIS CORN CROP.

BY JOHN DAVIS.

Ploughing for corn usually begins after the spring small grains are in,—say from the middle to the last of April, in Central Illinois. It is mostly done with two horses, to a common cast-steel, twelve or fourteen-inch plough, by a man or boy walking in the furrow, holding the handles and driving the team. It is not uncommon to see three horses driven abreast to a plough cutting fourteen to sixteen inches.

Much of the ploughing is done, also, by gang-ploughs, attached to a pair of wheels, turning two furrows, and drawn by four horses. The driver sits on a seat above the ploughs, managing them by means of a lever, and driving the team with two or four lines. This manner of ploughing is coming much into use and produces good results. Some of the gang ploughs are so arranged that one plough may be placed behind the other, thus forming a trench or subsoil arrangement. This is a very valuable feature, as it is impossible to work our Illinois prairies too deeply.

After corn ground is broken, it is usually well harrowed, and then marked off with a three-runnered sled or marker, into rows not quite four feet apart. The planting is done by a man and a boy, with two horses and a two-rowed corn planter, travelling at right angles to the above-mentioned marks. The furrows for the corn are opened by a pair of sharp steel-shod runners, under the weight of the boy who sits on the low front seat and works the dropping lever. The corn is covered by a pair of wooden wheels which carry the driver and the principal weight of the machine. The boy dismounts at the end of the row, to arrange the stake which measures the width of the rows and guides the driver on his next return trip. The machine is turned by the driver and team, the boy re-mounts and two more rows are planted. Twelve to fifteen acres are thus planted, in the best manner, in a single day.

Double or two-bladed shovel ploughs, single shovels and turning ploughs drawn by one horse, are mostly used in cultivation. There are devices for coupling two ploughs together, of each of the above sorts, either with or without wheels, to be drawn by two horses. Some of these devices are very excellent, doing good work economically.

There are many patent cultivators also, drawn by a pair of horses, managed by a man or boy either on foot or riding. These usually have four blades, or ploughs of various shapes, making four furrows at a single through.

In good mellow soils, promptly attended to, these cultivators are valuable, but in negligent, careless hands, much bad work is done. Soils, compacted by rains and becoming weedy, need careful ploughing to throw the dirt into the hills, to cover the weeds, before they get too large. If this is not done at the proper time the crop is seriously damaged, as it would be impossible to clean out by hand hoeing the large crops generally planted. The hand hoe is never used, and where the crop is properly managed is never needed.

I will here say that ploughing is usually done better by men on foot, than by persons riding. This is especially the case if the ploughman is disinterested "hired help."

If the corn crop is designed for cattle feed it is cut, during September and October, just

above the ground and set on end in round shocks. There it stands till needed in the winter.

It is then hauled on sleds or wagons and scattered on the ground among the cattle. Hogs follow the cattle and get a good living as scavengers. But hogs are not fattened for market in this way.

If the crop is designed to make pork, a portion of the field is fenced off for a hog lot, where it can be readily supplied with water, and the hogs turned into the standing crop. The remainder of the corn is jerked from the stalk, hauled in wagons and scattered among the hogs as they require it. This fattening process commences in August or early September, and should be completed by cold weather. At any rate, not later than the middle of December.

Good thrifty hogs fatten very fast on new soft corn, during the usually fine weather of our long western autumns.

The best hogs used for this wholesale management are grade Berkshires, and similar hardy breeds. They should be from fifteen to twenty months old at the end of the process; should have fallowed cattle the previous winter, and lived on clover and the small grain stubble field through the summer. They should consume the kitchen and other slops and offal, with a little corn from time to time during their early days.

Our best beef cattle are grade short-horns, and should be sold in spring or early summer when full four years old. They are often turned off sooner, but it is not considered the most profitable. Some of the graziers and feeders have experimented largely with Texas cattle a few years past. They did it on the principle that "cattle is cattle." The experiment, however, is seldom tried twice by the same man. It is readily perceived that there is a "vast difference in cattle." Burnt fingers are splendid reminders in such cases, and the lesson is seldom forgotten when learned through heavy losses. These old ways of using up the corn crop are gradually giving place to a direct sale of the crop, for shipment to the markets of the country.

On this plan it is husked from the stalk in the fall and thrown into temporary cribs and covered from the weather. Here it awaits the convenience of the owner to be hauled to the railroad station or boat landing. It is then shelled by steam or horse power, sacked and shipped; sometimes by the farmer, but oftener by men who deal in grain as a business.

The harvested confields, containing the stalks, husks and refuse or neglected corn, is depastured through the winter by cattle and other farm stock.

Box 50, *Decatur*, *Ill.*, *June*, 1870.

—A horse is fond of hay, and he chews it better when he has not a *bit* in his mouth.

EXTRACTS AND REPLIES.

SALTPETRE, AND TURNING IN GREEN CROPS.

I was highly interested in your editorial concerning saltpetre.

I experimented somewhat on a compound, meant to be a perfect fertilizer—*i. e.*, to contain all the elements of plant food, last year,—and am still doing so this year. It contains saltpetre or salnitre, (crude nitrate of soda). Also nitrate of potash;—is not the latter also saltpetre? I suppose it is nitrogen in one of its forms, reduced to, or confined with, a salt or mineral substance—potash—as the former is nitrogen combined with the salt of soda. Bone, gypsum, and salt, (chloride of sodium) were also contained in this manure. As far as I have experimented, it seems to be proving satisfactory. Instead of costing me only five cents a pound, however, saltpetre cost me $9.50 a hundred in Boston. Nitrate of potash cost 12½ cents a pound.

If there is any form in which it can be had at a rate much lower than I paid, or any place where it could be thus had, I would like to know it.

Used above, it would (would it not?) cause a growth of vegetation of a rank nature, but lacking silica; and grain thus raised would lodge, just as a strip in a fine acre of wheat on my place, manured from the barn cellar, lodges, while the rest, fertilized with this compound, ashes, bone dust, &c., alternately, stands upright. (Thanks to Mr. Henry Poor's advice for the wheat.) It would also cause the exhaustion of the other elements of plant food from the soil. How have you been in the habit of using it? Must it be dissolved? If so, how should it be applied? In combination with an absorbent, or in a liquid form? In the latter way, an H. H. D. on a wagon, with a hole near the bottom, and a furrowed board to cause the liquid to spread out in different directions, would be a cheap mode of facilitating the business. Or can it be applied dry, broadcast, and dissolved by rain? I have a field of grass land so far from any barn as to make it inconvenient to cart manure, which I want nearer home, to it. I shall top dress it with *something* this fall, and for this reason, make these inquiries.

What would be the difference in the effect of nitrate of soda, and nitrate of potash? Contrary to the rule, I used wood ashes in my compound.

What kind of a fertilizer would old bog hay, ploughed in, make?

A neighbor of mine sowed the different parts of a field, last year, with buckwheat, and with oats, and ploughed them under for a fertilizer; he then sowed to winter wheat. The wheat looks by far the best where the oats were turned in. I have heard it stated that buckwheat had a poisonous nature to other crops following it on the same soil, and for this reason it was condemned as a green fertilizer.

Several years since a prominent nurseryman and farmer near Philadelphia, advanced the opinion that the southern field pea was by far the best green manure crop that could be raised, especially on light soils; that it exhausted the soil but little, obtaining a large part of its nourishment from the atmosphere. I think the pea is also fitted to draw the inorganic element from the soil in a more crude state than many other crops. A market gardener told me he could get as good results from ground bone as a pea fertilizer, in a crude state, as after it had been reduced to a finer condition with sulphuric acid—and that this was the case with few crops. The coarse particles thus appropriated would become sufficiently refined by passing through the vegetable organs of the pea vine, to fit them for food for any other plant.

Bone is peculiarly adapted to fertilize the pea

crop; and if the cost of the seed be not too great, it would seem to be a good crop for the purpose. The great objection to clover is, that without high manuring, it takes until the second year to get a crop, while it would seem that two crops of peas might be raised and turned in the same year. The objection to oats would be, I suppose, that they draw too heavily from the soil, and not enough from the atmosphere. The name "southern field pea," seems to indicate a variety grown in the south as a field crop—probably for hog or cattle feed. Then there is the Canada pea, sowed sometimes with oats—the question might arise, what is the value of this pea, with or without the oats, for a green fertilizer? Probably the southern pea, like southern corn, makes a larger growth than the northern varieties. How about winter rye for this purpose? I should like to hear the opinions of the editor in regard to this question of green manuring.

Perhaps other crops than wheat would follow buckwheat, as well as oats. JOHN.

Franklin, Mass., June, 1870.

REMARKS.—Nitrate of potash is, as you suppose, saltpetre. The experiment with it to which you refer was made before the war, when saltpetre cost much less than at present.

Used alone, it would probably have the effect upon crops which you indicate,—greatly increasing their size at the expense of strength and firmness. Wheat, on clay loams that are highly manured, sometimes entirely fails to produce grain, but has a heavy growth of stem and leaves which fall to the ground.

In using saltpetre, we get it as fine as we can conveniently by pounding and sow it broadcast. In the experiment referred to, 160 pounds of saltpetre were used, and the same number of pounds, per acre, of plaster.

In reply to your question, "What would be the difference in the effect of nitrate of soda, and nitrate of potash," we would say that there is much more of potash in the composition of most vegetables, than of soda. Hence they are more hungry for potash than for soda, and obtain what they need from nitrate of potash. Nitrate of potash contains a larger quantity of nitric acid than does nitrate of soda; hence there is more nitrogen furnished for vegetable use than there is from nitrate of soda. In other words, nitrate of potash is more immediately active, and furnishes a larger quantity of what vegetables most need.

Old bog hay, ploughed under, a little at a time, would probably enrich a soil so as to enable it to produce abundant crops, after the process had been continued for some years.

There are several other points touched upon by our correspondent, all of them of interest and importance. We hope others will note and remark upon them. With regard to manuring by green crops, we have often spoken encouragingly. By this process any of our lands may be made productive. Whether this can be *profitably* done, will depend upon a variety of circumstances, which would require considerable space to discuss. But that our "scrub oak" lands and pine plains may be redeemed, we cannot doubt when, to-day, people are making some portions of the desert of Sahara to blossom as the rose.

Upon the whole, we are inclined to think the clover is to be the great renovator in preference to any plant yet used, in restoring exhausted soils to a state of fertility.

FOOT ROT IN CATTLE.

In the autumn of 1868, I went to the pasture to look after and salt my cattle. Missing a fine steer from my herd, which always came at my call I searched about and soon found him lying down and unable to rise—one foot being in the condition described by your correspondent, D. K. W.

Having a small can of kerosene oil with me, I saturated the foot with it thoroughly and left the animal in the pasture. I returned again the same day to note effect of, and to repeat the application. Three or four applications cured the foot, and the steer did well.

Several cattle belonging to my neighbors and acquaintances have since been similarly affected, and I have recommended applications of kerosene oil. and with unvarying success. JOHN DURANT.

Brookfield, Mass., June 29, 1870.

REMARKS.—The carboline, or carbolic acid, contained in the kerosene oil, was undoubtedly the curative principle in this case, as its use is recommended in this disease. In behalf of D. K. W., and others, who may have cattle with this disease, we thank Mr. Durant for his statement.

BLOOD WART ON COLT.

I have a two-year-old colt that has a wart on the inside of the hind leg just above the gambrel joint. It is about three-fourths of an inch in diameter, and is what we call here a bloody wart. If you can tell me how to cure it yon will much oblige

Dudswell, Can., July 4, 1870. J. C. LASSELL.

REMARKS.—As warts left to themselves generallly disappear when their time comes, a great variety of applications have the credit of cures. Caustics are often used. Pare the wart down to the quick, then with a feather, small brush, or a stick broomed or roughed at the end, apply the caustic, being careful not to touch any part but the wart. Yellow Orpiment wetted with a little water, is recommended by Dr. McClure; butter of antimony, or nitric or sulphuric acid by others. Dr. McClure says that the Yellow Orpiment will cause considerable inflammation, but in a few days the wart will drop off, leaving a healthy sore, which soon heals. If the whole wart does not come off on the first application, a second must be made. We have known a little of the butter of antimony being applied three times a day until the roots of the wart appear to be dead. After the wart is exterminated, a lotion of one pint of rum, half pint water, one ounce of aloes and one-fourth ounce of myrrh, pulverized, and mixed, is recommended by a correspondent of the *Rural New Yorker* as a wash to be used three times a day on the sore.

Prof. Law, the Veterinary Lecturer of the Massachusetts Agricultural College, recommends tying a stout hard cord round the neck of the wart as tight as you can draw it. If you succeed in cutting off all supply of blood the wart will drop off

in about a week. If not, apply a second cord in the same way round the diminished neck of the tumor.

CULTURE OF FLOWERS.

I think I do not hate flowers. I rather love an orderly flower garden, or the beauties in a hot house, or good specimens upon the window seat. I admire, in a degree, the zeal displayed by the busy house-keeper who with all her cares, never forgets the thirsty soil in the box where stands her favorite plant.

But my wife is rather enthusiastic in her love for flowers, and the catalogues of flower seeds and bulbs have by the illustrations and descriptions brought a large variety to her acquaintance. Her lady friends also have plants that are propagated by slips; these have been brought home and put into dirt in boxes, bowls, pans, hanging pots, &c., so that the windows are filled, the stands, tables and writing desk loaded.

Our winters are so severe that nearly all plants are banished to the cellars during that season, but early spring causes them to appear again. This spring soon after they began their growth they were badly infested with lice. My wife wished me to smoke them out. Now it makes me sick to smoke. Shall I kill myself to kill the little bugs? I think not.

Then new dirt must be had to sow seed in. I turned that job over to my little boy who with his little wheelbarrow and shovel prospected in every direction,—here for sand, there for black loam, hither and yon for manure, muck, scrapings of the barnyard, &c. But the best seemed to be the remains of a compost heap. This, however, soon began to show signs of animal life. Little white worms, a fourth of an inch long, that would curl themselves up, then suddenly open and dart an inch or more; tawny ones, half an inch long and capable of growing longer; a species of wire worm; ants, little light red fellows, very busy digging pits and tunnels, appeared in the mass. As it was likely that the diet of worms was vegetables it was desirable to destroy them; so several pans were filled with dirt and put into the stove oven to bake. In this way the soil was prepared for the seeds, which were sown and covered over with sand to prevent the surface from hardening, so the delicate sprouts could burst from the tiny seeds.

Then what anxious watchings for a show of springing vegetation! What debatings whether it were weeds or flowers that were appearing to view. After several day's doubt in respect to the character of one specimen it was triumphantly declared to be a plant, because there was a bug on it! As the plants grew the number of boxes, basins, pans, bowls and cups increased; small bits of green were transplanted and gradually hardy kinds were exposed in the open ground. Still for a time the cold nights rendered occasional protection necessary. One morning after a lengthy search I found my hat out in the garden over a plant. Probably, however, the beauty of summer and fall will more than repay the labor and care of the spring. Let us hope so!

If corn received such care a hundred bushels per acre would doubtless be the result. J.

CROPS, COLLEGE, THEORY AND PRACTICE IN THE CONNECTICUT VALLEY.

Nearly all the crops are looking finely in this vicinity. Corn, wheat, oats, tobacco, broom corn, grass, (excepting old fields) are promising more than an average yield. Other sections near, complain that grass is light, corn small and potatoes smaller. It is possible we are blessed and in a state of grace, in consequence of the Agricultural College being located in our district. One great—not peculiar—benefit we have already received in the shape of a prediction or promise. One of the students of the college says, "Wait a few years, and we will *tell* you how to raise fifty bushels of corn to the acre on your plain lands." This fellow must be brother to the one who *tells* us how to milk a cow properly, by directing to "take hold of the teats, and with an uplifting of the hand, and a pressure, and a down pulling, imitating the sucking of a calf, you will draw the milk." Now real farmers, those who make farming their business, are just tired of such *telling*. If we need aid, it is in *showing* us how large crops can be raised at a profit. We are heartily sick of these advisers, these talking and writing farmers, whose whole knowledge of the business is derived from books. These professors, these doctors, these merchants, these priests, whose experience consists in seeing other men work, or, like Ex-President Fillmore, who, when in the field with the workmen, bound one bundle of wheat, and ever after felt and said, "I too am a farmer," assume to be competent to criticise and advise in all departments of farming. The agricultural papers are doing a good work in teaching the farmer that his profession is an art and a trade; that it must be acquired by hard work; that theory alone will not make a man a farmer; that doctors and politicians, and professors of chemistry, are not as competent to advise the farmer, as are experienced farmers themselves. They are learning through the agricultural papers to have confidence in themselves and in each other, and not to be dissatisfied with their profession. H. S.

Leverett, Mass., July 4, 1870.

HAY CROP IN BARRE, MASS.

The farmers in this region who have well manured their grass fields,—and there are many here who have them under high cultivation,—are realizing large crops of hay this season, fully equaling that of former years; while on the other hand, those that have paid too little attention to their manure heaps fall behind the average hay crop this year. It is really marvelous that even some of our intelligent farmers who are shrewd and observing in other respects, neglect the study of this important branch of agriculture—I mean the subject of manures—and depend more upon the *extent* of their meadows, than the manner of their cultivation. In this respect this class might well take pattern from the English farmer or of our city vegetable farmer, whose seven acres, or less, yield a comfortable subsistence for a family. It is easy to fancy how awkward such a farmer would feel, if by some sudden transposition of the enchanter's wand he could be plumped down bodily with all his household goods, on a western prairie farm covering thousands of acres, into which the good fairy had thrust in the seed, and was now bearing immense waving fields of wheat.

CALEB RUSSET.

Barre, Mass., July 4, 1870.

OX WOUNDED BY A MOWING MACHINE.

I have an ox that was cut with a mowing machine about ten days since. The wound is some three or four inches above the fetlock, and the cord is apparently about half cut off; being cut more on one side of the leg than the other. A mass looking like proud flesh about the size of an English walnut projects from the wound. The leg is some swollen. The ox walks, but is very lame. At first I closed up the wound, and put on a tarred bandage, which after about three days I took off and applied cold water, then a liniment of myrrh, camphor gum and alcohol. In

about five days the leg began to swell. I then applied a strong liquor, quite hot, of wormwood and smartweed. It is not as sore nor swelled so much. But what to do for that cord, I don't know.

JUSTIN S. MONTAGUE.

Woodstock, Vt., July 12, 1870.

REMARKS.—We doubt whether anything can be done directly for the cord, further than by aiding nature in its efforts to outgrow the wound. We should advise you to get Dr. Boynton or some other physician to examine the ox. Advice based on such examination would be far more reliable than any that we can give from a mere description. Flies, dirt, &c., should be kept from the wound, and perhaps the wormwood and smartweed wash is about as good as any that can be used. Of late carbolic soap is recommended for this purpose. Your efforts should be directed to assist nature in her efforts to heal the wound, rather than to find any infallible "cure."

DRAINING.

Information is wanted in relation to underdraining land that has a tight, pan subsoil, which holds water late in the spring; is smart, powerful land, will produce large crops of grass, corn, or grain, when the season is not too wet. Now, what I want to know, is, will it pay or be profitable to make drains across this field or up and down, (as the land cants sufficient for the water to run either way,) and lay stone drains and fill in with small stone, of which there seems to be plenty on and in the ground?

I have had no practical experience in draining land; all I know is what I have read in agricultural papers. I do not want you to tell me that tile are best for drains, for there are none made in this place or near here, and to bring them on the railroad would be too expensive.

I might answer some of the numerous questions that have been asked in the FARMER the past year, but I will wait and see what you say in relation to my drains. JOHN L. JONES.

Ripley, Maine, 1870.

REMARKS.—On such land as you describe, there is no doubt in our mind that it would be profitable to drain by the use of stones. To make a sure thing of it, we would advise that the work be done in a thorough manner. Judge French, in his excellent work on "*Farm Drainage*," says:—"In clay or hard pan, such a drain [stones] may be made durable, with proper care, but it must be laid deep enough to be beyond the effect of the treading of cattle and of loaded teams and the common action of frost." A drain between three and four feet deep will be more sure to carry the water freely and will be much more permanent than one laid a foot or more less.

It will be well, too, to consider which will be best, to form a duct of six, eight or more inches of stones of considerable size, in the bottom of the ditch, cover with flat stones, either in a triangular duct or the square culvert, then put on shavings or hay, and fill to the surface with earth; or fill over the duct with small stones a portion of the way to the surface, and finish with earth.

Our own opinion, based upon some experience, is, that the small stones would be injurious rather than beneficial. They would allow a pretty free passage for the water to carry down with it sand and fine soil, which would gradually fill the duct and afford fine nestling places for moles. The moles are busy people, frequently passing up and down from the stones to the surface, and thereby leaving numerous holes where the water can run down in volume during showers, and take the earth along with it.

On the contrary, if the duct is covered with turf, shavings or straw, and then the ditch filled with earth, the water could not rush down through it, or fall in drops, but when the soil is filled with all it could hold, would gently and gradually pass down through the pores of the soil by its own weight, into the duct, without disturbing the earth above it.

With regard to the *course* in which the drains should run, we think they should be up and down; that is, in the direction of the general slope.

Drains put in the hard pan, between three and four feet deep and twenty feet apart, will probably remain good for fifty years—perhaps a hundred—and, with judicious treatment in cultivating, the field will produce double the value in crops than if it remained undrained.

A considerable portion of the expense of draining is repaid by the increased value of that portion of the soil which is trenched. When a field is treated alike in all its parts, with manure and pulverization, the lines of the drains will show double the crops that are produced on other portions of the field. This is the result of a fine root bed, giving the roots ample room for extending themselves and finding the food they need. Thus you have our say in relation to your drains. Probably we could have written more intelligently were we better acquainted with your land and its surroundings. In closing, we must put in our claim for the fulfilment of your implid promise about answering questions that are asked in the FARMER. We have no doubt of your ability to do so. Why should you not do it then? The idea that ministers, lawyers, &c., should do the talking and writing for farmers is all wrong, as is also that other notion that by writing anything to be printed, a common farmer is liable to be laughed at for trying to be smarter, wiser or more learned than his neighbors. Why shouldn't farmers talk and write about farming?

IRISH FARMERS.—YANKEE EXODUS.

An Irish correspondent stated some weeks since in the FARMER that his countrymen are superseding Yankees on our New England farms. This fact is very noticeable in this region, which has a good reputation for grazing and mowing lands. The Irishman "works out" as a laborer for some years, until he has acquired five hundred or a thousand dollars, which he invests as part payment for a small, snug farm and stock, and before long it is paid for. The exceptions are rare in which this class do not make thrifty, provident, and *honest* men,—good citizens who are really a great accession to the community. They reac

large families—the great prevailing sin of the 'murder of the innocents" is to a great degree unknown among them, and they are well instructed in the great principles of freedom. As your correspondent, above alluded to, did not assign the causes why many of our young men leave the farm, it may not be amiss in this connection to briefly state them as they occur to the mind of the writer. Many are dissatisfied with the quiet humdrum life of the farm, a feeling too often engendered, we apprehend, from the cheap, sensational works of fiction too much afloat. Others are tired and sick of the many hours of farm labor required; of the utter lack of improvement everywhere visible,—the scraggy walls and fences, &c.; while others, stimulated by a purer and higher ambition, carve out a new destiny on the Western prairie, carrying New England thrift and enterprise with them, giving character and tone to the new country. It is not impossible that the time is coming when the avenues of railway travel will open communication to that extent between the East and West, which shall make mechanical pursuits paramount here, and agricultural products the principal business there, just as we see in cities particular branches of business cluster in the same neighborhood. CALEB RUSSET.

Barre, Mass., July 4, 1870.

WHEAT OR RYE FOR GREEN FODDER.

I have reserved a piece of ground on which I intended to raise a crop of winter rye, to cut green, for milch cow feed in spring. Now I would like to inquire what kind of a substitute winter wheat would be?

The soil is so rich that it would produce heavy straw, but the grain would be light, and the straw lodge, if not early cut.

I believe it is usually the case that the richer the grain, the richer the stalk, from whose juices the former obtains much of its material.

Thus, sweet corn fodder is sweeter, better, and more nutritious than any other.

If there be no particular objection, I shall sow the piece with some of both rye and wheat, putting in very early. I have a piece of my own now, looking finely, with plump heads of ripening grain. JOHN.

Franklin, Mass., July 1, 1870.

REMARKS.—We have never fed wheat straw in a green state to cattle, and cannot, therefore, speak from actual experience. No reason occurs to us why winter wheat would not be a good substitute for rye. The sowing of both wheat and rye will be an experiment worth trying. Let us know the result.

YOUNG TURKEYS DYING.

I wish to inquire the cause of the death of young turkeys. They live and are smart until about six weeks old, when they droop and die. At first I thought it might be lice, but conclude it is not. I have given them everything I could think of, but to no purpose. If you or any of the poultry men can tell the cause and remedy you will confer a favor on a reader. J. G.

South Berwick, Me., July 11, 1870.

REMARKS.—Will our correspondent, "A Farmer's Wife," of Hyde Park, Vt., reply to the foregoing inquiry, as many other turkey raisers are every year troubled in a manner similar to that described by "J. G." The cause, we have little doubt, is in the nature of the turkey. Mr. Bement, in his work on Poultry, says, at two periods of their lives turkeys are very apt to die; first, about the third day after they are hatched; and, second, when they throw out what is called the "red head," which they do at about six weeks old. The latter is a very critical period in the life of a turkey—much more so than the period of moulting. A shower, even in warm weather, or damp ground, will often carry off half a large brood. The food should be increased at this time, and rendered more nutritious by adding boiled eggs, wheaten flour, bruised hemp seed, or a few bruised beans.

Mr. H. A. Sumner, of Brandon, Vermont, in an article in the FARMER of June, 1867, says that young turkies should not be allowed to ramble until the dew is off, be returned to the coop nights, and not allowed out on rainy days.

STRAWBERRY CULTURE.

It is my intention to start in the strawberry business, and would inquire through your valuable paper, which is the best time to transplant the plants,—whether in the fall or spring; and also, which kind of berry does the best on sandy soil in Southern Massachusetts? If transplanted this fall should I be able to get any fruit next season from the plants so set? Is it best to mulch strawberries in the spring to keep the sand from the berries during rain storms? T. H. M.

New Bedford, Mass., July, 1870.

REMARKS.—The spring is usually supposed to be the best time to set strawberry plants, though we have been successful in setting the plants early in August. If dry weather follows, they must be plentifully watered, especially if on sandy land. In field culture, there would be less risk in spring setting than in August.

It is not usual to take much fruit from the plants the first year, as it is supposed to be more profitable to let the plants get thoroughly rooted before they produce fruit.

The Wilson's Albany is said by one of our largest cultivators to be "the best for market and the poorest for the table!" When thoroughly ripe, however, it is spirited and excellent, although still too acid for some tastes.

It is a good plan to mulch the plants, as it not only keeps the fruit from the ground, but keeps the soil moist.

The strawberry plant will bear high manuring, and be all the better for it.

BUTTER MAKING AND PIG GROWING.

I would like to inquire through the FARMER, of some good butter maker, if it is best to wash butter, when it comes very hard and can be worked without the use of water, so as to get all the buttermilk out before putting the salt in, and if best to finish it that day, or let it stand till the next; also, whether small pigs will do best on thick or thin food. C. M. T.

Island Falls, Me., June, 1870.

—It pays well to clip over pasture land with a scythe at coarse places left by the cattle, and cart and stack near stables for bedding.

THE EIDER DUCK.

Among the Sea Ducks that visit the bays and inlets of the New England coast during the fall and winter months, the Eider is distinguished for the remarkable softness of its down and the beauty of its plumage. They breed in Labrador and are seldom seen south of New York. Mr. Samuels, in his book on the Birds of New England, says the prevailing color is white, the under surface and sides of body, hinder part of back, rump and tail black; wings white on both surfaces, except the quills, which are black. The nest is placed on the ground, under a bush or tuft of grass, and is lined by a thick layer of down which the female plucks from her breast. The down of a nest, though bulky enough to fill a hat, rarely weighs more than an ounce. They fly rapidly and generally near the water, and are expert divers and remain a long time under water. They are shy and difficult to kill. The flesh of the young and females is said to be well flavored, but that of the males is tough and fishy.

TRIAL OF AN AMERICAN STEAM PLOUGH IN BOSTON.—Most of the readers of the FARMER will remember the illustration of the Standish Steam Plough that we published last year, (Monthly, page 428.) This plough or rather cultivator, was invented in California, where two of them are now in use. The machine that was recently tested in South Boston was made in this city under the superintendence of the inventor, Mr. P. H. Standish. The *Advertiser* says that the results of the trial here were quite satisfactory. The machine was easily directed by two guiding wheels in front, and moved over the ground making the dirt fly, and completely breaking up the ground to the depth of eight inches. The principle seems to be a correct one, and though this trial showed some slight defects, they can be easily remedied and another trial will be had at an early day. The power of the engine was thirty horse.

FALL CARE OF STOCK.—The *Maine Farmer* gives an abstract of Mr. Willard's Lectures at Orono, on dairy farming. In closing his remarks on the care of stock, he says:—It requires one-fourth more food to winter a cow if she come to the barn in a poor condition. At no other season of the year is so much care needed as in late autumn and so little care exercised. Frosts affect the grass to such a degree that it is not a good plan to keep cows in the pasture without additional food after the first hard frosts. Barns should be warm and well ventilated, and by so constructing them as to secure these two conditions a large amount of food will be economized.

WHITEWASH THAT WILL NOT RUB OFF.

It is not only a common, but a very wholesome practice, to use whitewash. It preserves wood work, renders it disagreeable as the habitation of insects, and promotes health. Thousands of dwellings are made cheerful by its presence on the ceilings of their rooms, and even the walls are often indebted to it, where paper and paint cannot be afforded. It is cheap and easily applied.

The outsides of barns are sometimes whitewashed, and leantos and horse stalls are quite frequently covered with it, and are kept clean and wholesome by its use.

One objection to it, as commonly used, is that it rubs off easily when touched, and spoils the Sunday coat or best hat. It is annoying to go into church, or through the street, with broad lines of white drawn on one's back, to say nothing of spoiling the cloth. To prevent all this, if the wash is to be used indoors, mix half a pailful of lime and water, take half a pint of flour and make a starch of it, and pour it into the whitewash while hot. Stir it well and make it ready by thinning it for use. A little glue will answer the same purpose. If for out-door work, add a little salt and boiled rice, made thin. Scarcely a particle of the lime can be rubbed off when prepared in this manner.

PESTS OF THE FARM.

LEGION is their name and voracious are their habits. They come unbidden, in endless varieties and forms. They attack everything, animal and vegetable; the hens and the currants, the hogs and the roses, the horses and the grain, the cattle and the grass, the sheep and the beans, the dogs and the potatoes, and, thanks to their greedy appetite, they devour each other when they find nothing else to do.

Now that the currant worm is taking a nap, or passing through some of the forms which insects so readily assume in order to continue their mischief, we have another, which for bulk, destructive habits and ugliness of appearance, surpasses all that have come yet. He may be found on the outer twigs of the elm, willow and perhaps other trees. Herding in groups, like the deadly sirocco or typhoon, he destroys every thing he passes over. In outline he is black and as ugly as sin, and resembles a large oak log stuck full of steel points a foot in length, though not, perhaps, quite as big as a large oak log! But it is easy enough to imagine him so.

Harris calls the butterfly from which the ugly looking fellow proceeds, the *Antiopa* butterfly, and says their caterpillars live together in great numbers on the poplar, willow, and elm, on which the first broods may be found early in June. They are black, minutely dotted with white, with a row of eight dark brick-red spots on the top of the back. The head is black and rough with projecting points; the spines, of which there are six or seven on each segment, except the first, are black, stiff, and branched, and the intermediate legs are reddish. When fully grown they measure an inch and three-quarters in length, and appear very formidable with their thorny armature, which is doubtless intended to defend them from their enemies. It was formerly supposed that they were venomous, and capable of inflicting dangerous wounds; and within my remembrance many persons were so much alarmed on this account as to cut down all the poplar trees around their dwellings. This alarm was unfounded; for, although there are some caterpillars that have the power of inflicting venomous wounds with their spines and hairs, this is not the case with those of the Antiopa butterfly. The only injury which can be laid to their charge, is that of despoiling of their foliage some of our most ornamental trees, and this is enough to induce us to take all proper measures for exterminating the insects, short of destroying the trees that they infest. He has sometimes seen them in such profusion on the willow and elm, that the limbs bent under their weight; and the long leafless branches, which they had stripped and deserted, gave sufficient proof of the voracity of these caterpillars. The chrysalis is of a dark brown color, with large tawny spots around the pointed tubercles on the back. The butterflies come forth in eleven or twelve days after the insects have entered upon the chrysalis state, and this occurs in the beginning of July. A second brood of caterpillars is produced in August, and they pass through all their changes before winter."

The only means which we have found of destroying this caterpillar is by climbing the tree and cutting off the twigs upon which they are collected, and then crushing them under foot. But then there is altogether too many of them to render this operation an an agreeable one. Will some one try carboline, or a shock of lightning that can be sent broadcast among them, and tell us how to apply it.

We certainly have a busy time of it in these parts, in checking the inroads of our visitors from going too far. We have here the parseley caterpillars, the pea-weavil, the plant-lice, pear, peach, apple, and locust borers, the June moth that riddles the apples, the curculio who destroys the plums, skippers, jumpers and joint-worms, gad-flies, dor-bugs, and drop-worms, saw-flies and fire beetles, squash-bugs, bee-moths, frog-hoppers, pear slugs, gnats and musquitoes, to say nothing of the millions of bark-lice which attack the fruit trees, and as many more which prey upon the domestic animals!

No wonder that we are an industrious people.

It is something like the old Roman mode of punishing a criminal, who was placed in a cistern into which water was continually flowing. He could pump it out, keep his head above water and live. So can we, by the aid of science, carbolic soap and white hellebore, keep the wolf from the door!

What will come next? Who can tell? Do inform us at once, and tell us how many heads and legs and harpoons the critter carries, and whether he can be captured or demolished by anything less than a mortar or a "swamp angel."

AGRICULTURAL ITEMS.

—One hundred thousand pounds of cheese are sometimes shipped from the little depot at Wellington, Lorain County, Ohio, in one day.

—The *Prairie Farmer* cautions people against using currants and gooseberries from bushes to which poisonous substances were applied for the destruction of insects.

—It has been stated by some one curious in statistics, that the whole amount of grain raised in New England each year would not supply its inhabitants six weeks. Would its production of meat furnish a larger proportional supply?

—To destroy burdocks and other troublesome plants, the *Rural New Yorker* says, cut close to the ground with a sharp hoe, and apply a few drops of kerosene. The plant so treated will never "put in appearance" again.

—In laying stone wall on sandy land, you can begin to lay the stones at the surface, says the *Maine Farmer;* but if it is clayey, you will have to dig and fill in cobble stones to lay your largest stones upon, if you wish to have them stand, so as to give your grandson no trouble.

—The *Poultry Bulletin* says that carbolic acid has proved very effective in preventing and destroying vermin and in purifying the air about poultry houses, and asks may not the excessive use of carbolic acid in close proximity to eggs destroy their fertility?

—After ten years' experience with hay caps, a correspondent of the *Maine Farmer* says no one is well equipped for haying without them. Hay but partially dried, put up and capped may stand through a long storm and receive but slight damage. But he regards the horse pitch fork as something to be let "severely alone."

—In reply to the questions how much corn will be sufficient for fattening steers, averaging 900 pounds at the start, from November 1 to April 1, and how much ought they to gain during those five months, a correspondent of the *Western Rural* replies, cattle of the above weight will consume from fifty so sixty bushels of corn, and if properly fed and sheltered should take on from 200 to 250 pounds apiece.

—It is very common for a certain class of agricultural writers to charge farmers with being behind the times, and loth to adopt modern improvements, &c. But *Forney's Weekly Press* says unwillingness to adopt new implements cannot be charged to farmers generally. It thinks no class has been more ready to adopt every useful implement, and cites the change from the implements used twenty years ago, in proof of this statement.

—The editor of the *Germantown Telegraph* does not believe that the English sparrows lately imported to this country destroy the worms that infest the shade trees of our cities. He says, of the five hundred sparrows set at liberty in the public squares of Philadelphia, we do not know how many remain, or what has become of them. Their numbers were at least not increased last year, nor were the worms diminished through their efforts. No one has yet been willing to solemnly affirm that he actually saw one of these birds eat one of these worms.

NORTHAMPTON, MASS.—The Hampshire, Franklin and Hampden Agricultural Society has issued its programme for its fifty-second annual cattle show and exhibition, at Northampton, October 6 and 7. This society proposes to pay at the rate of 12 cents per mile for travel on premium cattle driven ten miles or more; and six cents per mile on those driven more than five and less than ten miles—the same competitor to receive only one travel. Travel may also be allowed to unsuccessful competitors, in case they appear deserving. The conditions of entry are calculated to draw out valuable information from successful competitors. Elnathan Graves, Williamsburg, President; A. P. Peck, Northampton, Secretary, and Delegate to State Board; H. K. Starkweather, Treasurer; J. H. Stebbins, Deerfield, A. T. Judd, So. Hadley Falls, A. Wright, Northampton, J. Parsons, Southampton, Executive Committee.

For the New England Farmer.

CHEESE FACTORIES.

I note Mr. H. M. Fales' inquiry about Cheese Factories, in your last, and your editorial comments on the same. Mr. L. N. Brown of New London, Oneida County, N. Y., will cheerfully answer the specific inquiry of Mr. Fales, and I cannot at this moment think of another whose experience so well qualifies him for that duty. He has been an extensive manufacturer, is a dealer in supplies, and has superintended the erection of a large number of factories, nearly one hundred,—the past season.

A large fund of valuable information may be found in the "Transactions of the Vermont Dairymen's Association" recently issued. It is furnished free to members; and

persons paying their membership for next year previous to the annual meeting in October, can have this year's volume free. Terms of membership $2, per annum. Life membership $5. Secretary's address, Georgia, Vt.

Now a word in regard to your comments. The time was when it was believed that a large number of cows was necessary to make the factory system profitable, and milk was hauled several miles to some of the earlier establishments, but it was soon found that there are more elements of expense than was at first recognized, and not the least of these is getting the milk to the factories. As a result, smaller establishments are becoming more popular, and in the old districts, factories for 200 cows are becoming more common than for more; indeed, several of the large establishments have adopted the system of making up their cheese in branch factories and hauling them together to the main house for curing and sale. Expert cheese makers are much more numerous than formerly and persons may be employed to run a small factory at more reasonable rates, and it is questionable whether it is not better economy to run a factory for 100 cows than to haul the milk more than a mile and a half.

But there is still another view to be taken of this subject. The universal trait of the American character, that of all adopting the same specialty at a time, which has so often brought our farming population to grief, is to be guarded against. It is true that there is a large increase in the consumption of cheese, and we hope to see it go on, believing it to be one of the most desirable articles of food for most persons; yet the increase in the consumption of butter more than keeps pace with it, and it will be a long time before cheese will come to be considered the absolute necessity that butter is. Cheese will sustain and build up the animal system and butter will not; but butter has so large a place in our system of cooking and eating that very few persons stop to ask about the absolute economy of using it as compared with cheese or anything else. It does not follow because a party has invested his money in a cheese factory that he is obliged to make cheese when he can make butter more profitably; but a cheese factory that has cost some $4000, standing idle is a sort of an eye-sore in a neighborhood, and we happen to know of some such even now; and, although we make no pretensions to prophetic visions, we venture the prophecy that there will be more such, unless they are so reconstructed as to fit them for making butter.

Were we situated just as Mr. Fales and his neighbors are, we would, without delay, erect a *butter factory*, and make such an article as would enable us to command the very top figures in Boston Market. With such market facilities as they can command and a well established reputation, which they can soon acquire, for making the very best article, they may depend upon much better returns than from cheese.

If it is deemed desirable to work up the skimmed milk instead of feeding it to pigs, they may rely on finding a ready sale for "skimmed cheese" at remunerative rates, although of course at not quite the full price of whole-milk cheese. More information on the subject of butter factories may be found in the Vermont Transactions, heretofore alluded to, than in any other publication extant.

O. S. BLISS.

Georgia, Vt., July 12, 1870.

For the New England Farmer.

MOWING, AND THINGS.

Since a portion of the grass must ever be cut with the hand-scythe, I will give such instructions as have been found to be valuable by one born sometime during the last century, and who can still grind, whet and swing a scythe to a charm.

IN GRINDING, bring the scythe as near to an edge as possible, but be careful not to turn the edge, for this not only wears the scythe rapidly, but renders it impossible to secure a firstrate edge until another grinding.

WHETTING.—Do not strike, nor bear on hard, for in that way you will draw the end of the whetstone directly across the edge, and wear a notch in the stone where it strikes the scythe. I can always tell whether a mower keeps his scythe in good order, by looking at his whetstone. Whet only sufficient to bring a keen edge, which must be determined by frequently feeling with the fingers. The whetstone should be of fine, sharp grit, and one that will not glaze; kept in good shape by frequent grinding. The Talcose stone is firstrate for an occasional whetting.

HANGING.—For my own stature, which is five feet eight inches, I find that two feet six inches from the heel to the lower thole, just right, and the tholes should be eighteen inches apart. For smooth land, the scythe should be three feet nine inches; shorter for lodged clover and rough ground. The point should be set three feet five inches from the upper thole. A long scythe, with the point brought pretty well in, strikes the grass with more of a drawing cut, and consequently cuts it off easier. Let the *point* of the scythe be twisted down a little; this will tend to make it hug the ground better than it will when the heel hangs equally low.

THE MOWER.—A tall man, other things equal, has an advantage in mowing, as height gives him power in the swing of the body. Let him straighten up at every clip, carry his right foot a little forward of the other, with the feet well spread apart, and shod with shoes without heels, to prevent sore toes; or, what is better, if he can, go barefoot. Do not mow much before breakfast, and be careful and not

get waterlogged in a hot day. Milk porridge, hot or cold, is excellent to lean upon; so is butter-milk and bonnyclabber, reduced with one-third water and sweetened with sugar; avoid molasses and water.

THE CLIP.—In carrying back the scythe, raise it well above the ground, dropping it in flat when the middle is just parallel with the body, and with a gentle sway of the body carry the clip, raising the heel of the scythe as it passes the centre, and turn the point under the swath, bringing it well back. In mowing, the breathing keeps tally with the clipping, and therefore let your motion be slow, so as not to interfere with your natural breathing. This is very important.

OPENING HAY.—The practice of many to wait until the dew is off and the ground warmed, is erroneous. By opening as soon as the sun is fairly shining, the hay, by the time the dew is off, will be well warmed on the top; turn it over then and you will see nothing of dew underneath, and will have gained from one to two hours start in the drying, by early opening.

TUMBLING AND PITCHING.—It pays well, in time and ease, to tumble the hay well. Roll it compact, and in no larger rolls than can be easily lifted with the fork. Do not drive too near the heap; leave room so that you can stand directly between the load and the hay; then, instead of fussing around, gathering scatterings and fixing things, place the fork on the top, a foot beyond what was the centre of the windrow, and press it to the ground, then you will lift in the best shape for both pitcher and loader. For the second fork full, strike right for the other half of the tumble, leaving the scatterings untouched for the third fork full. Though this is the easiest and the quickest way to load a tumble of hay, not one pitcher in fifty will thus "pitch in" without fussing around to get the scatterings at each fork full; when, if these are all left for the last, they are generally gathered by one fork full and in less time than is occupied at each half of the tumble. PHINEHAS FIELD.

East Charlemont, Mass., July 9, 1870.

For the New England Farmer.

NECESSITY OF DRYING GRASS IN MAKING HAY.

I have been a constant reader of your paper for more than three years, and find many valuable things, and some humbugs. I never before wrote a sentence for a paper in my life, and may never do it again; but it being a rainy day so I cannot work at haying, I have been looking over your last week's issue. I see the discussion is still going on about the proper time to cut hay, and how to cure it. I thought it had been discussed so much and tried so often that most farmers had become convinced that *grass* put in the barn would not make good hay.

One man says the secret is in storing it solid in the mow. Now I will give you a little of my experience in cutting hay. This is the fiftieth year that I have cut hay, and the forty-eighth that I have had a stock of cattle to take care of. I have found it very important to have hay got in the best possible order. The best hay that can be got for cows in milk, for calves or almost any stock that has no provender, is that cut and cured as my grandmother did her herbs. This however can be done only where there is little hay and much barn room. Cut before it is in full blossom, after the dew is off, on a bright day; spread thin in an airy place, and turn each day until thoroughly dry.

As to the secret of solid packing. I have cut and stacked large amounts of hay that could not be got to the barn until sledding. I have made stacks all the way from five to thirty hundred pounds in a stack, and have found that hay in a five or ten hundred pound stack will save well when it is so green that it would spoil in a thirty hundred pound stack. Just so in the barn. Hay put on a scaffold and not trodden will save when so green that if put in a bay and trodden solid it would spoil. In a bay where hay is injured by heating, that where the man stands most that mows away, will be most injured.

Two years ago I put into a bay 24x17 feet, some eight tons of hay that was cut when in full bloom, with a machine, after the dew was off; raked and put up before the dew fell at night; opened the next day, turned and got in in the afternoon. At the same time I had about two tons that had had the sun only one day, but as it looked like a storm, I put it on top of the other. As there was no storm, I immediately filled up the mow with well made hay—some sixteen tons in all. In September following, I pressed it, commencing on top, with the later cut hay. The bales weighed from 350 to 380 lbs. each. When I came to the hay that was put in green, the bales went from 340 to 310, and the hay at the place where the person stood who mowed away, was turned to a very dark color and was matted together. When I came to the early cut and thoroughly cured hay, the bales went from 380 to 410 pounds. No two days of July sun that ever shone in Maine would make hay so light as that put in so green as to go through a process of heating in the mow.

To have good hay, it should be cut when in full bloom or before, and well made. For working horses or oxen that are fed freely on provender, the seed should be pretty well matured, as early cut hay will make them too loose.

Let him who advocates putting grass into a mow, kill a fat hog in September, cut it up before the animal heat is out of it, pack it in a barrel without salt or brine, and head it up tightly, and if he can show good pork in

March, I may believe that grass will turn into hay packed solid and close in large masses.

S. H. FARNSWORTH.

China, Me., July 12, 1870.

THE DAM'S RELATIONS WITH DIFFERENT SIRES.

A notion in regard to the effects of a first impregnation of domestic animals has been promulgated, mostly I think by English theorists, in which it has been gravely announced that a blood mare or heifer first impregnated by a *scrub*, is forever thereafter rendered impure or no better than a grade; that no offspring from them, however pure the subsequent sire, is to be relied on as pure.

In America we have an unanswerable demonstration of the utter fallacy and falsehood of any such theory, in the fact that the mule breeders of Ohio, Indiana, Illinois, Missouri, Kentucky and Tennessee, where the great bulk of the supply is bred, breed their mares indiscriminately to jacks and horses, changing them first to one and then the other as the market demand for either horses or mules may dictate; in thousands of instances taking the first foal from a jack, and following immediately by a horse. This system is annually practiced in the regions I have named, is there carried out this very year, and has been in full practice for the last fifty years in nearly every township in all those States; yet we have the very first practical breeder to report to the agricultural press that any mare has been damaged in the *least*, in her availibility to breed perfect colts from a horse.

I can establish, by legal testimony, in any court of law, that a mare in Kentucky has produced twins at *one* birth—one a perfect *mule*, the other a perfect *horse;* and to descend to individual cases, my neighbor has this spring as fine a smooth, clean-limbed, evenly-colored, nicely-bred filly, as ever was foaled, from an old blood mare that has produced 15 mules in 17 years' breeding, without ever having been bred, except in the last instance, to a horse. I have myself bred as many as ten colts in one season, from mares that had been used by myself exclusively in mule breeding previously.

In the early days in mule breeding in Kentucky and Virginia, the practice generally obtained with the most careful breeders, of breeding even blood fillies for the first time to a jack, and the practice even now in Kentucky, is very common, and it is a practice worthy of attention. The foal of a jack is generally smaller than from a horse, and better adapted to the first breeding of a filly; and a filly at two years old is as available in breeding a mule as she would be at three years old from a horse, and to-day thousands of the best and most successful brood mares used for colt breeding, were first bred to a jack and produced a mule.

Let the practical mule breeder in all the country I have named, who has damaged his mares as horse breeders by breeding mules, speak out through your columns, giving his name and residence and the experience of his whole vicinity. I venture the prediction, Mr. Editor, that no such man can be found.—*Anthony Killgore, in Country Gent.*

WHAT THE SOIL IS TO THE FARMER.—For the husbandman the soil has the paramount of importance that is the home of the roots of his crops and the exclusive theatre of his labors in promoting their growth. Through it alone can he influence the amount of vegetable production, for the atmosphere and the light and heat of the sun are altogether beyond his control. Agriculture is the culture of the field. The value of the field lies in the quality of its soil. No study can have a grander maternal significance than the causes of fertility and barrenness, a knowledge of the means of economizing the one and overcoming the other, a knowledge of those natural laws which enable the farmer so to modify and manage his soil that all the deficiences of climate cannot deprive him of suitable reward for his exertions. The atmosphere and extra terrestrial influences that effect the growth of plants, are indeed in themselves beyond our control. We cannot modify them in kind or amount; but we can influence their subserviency to our purposes through the medium of the soil by a proper understanding of the characters of the latter.—*Prof. Johnson's "How Crops Feed."*

FENCES IN EUROPE.

Americans who give us sketches of their travels in Europe, often speak of farming sections in which there are few or no fences. But it appears from the following statement of a correspondent of the *Country Gentleman* that the absence of fences is far from universal:

In some parts of Europe the live stock is cared for by "tenders" and dogs; but in England it is not so, as the "open-field" parishes in England were reduced to a very few before the writer left that country; and, so far from any "open-field" system being desirable, in every instance where enclosures took place and hedges were planted in the vales, or walls built on the hills, and the owners had their ppoperty all within "ring fences" and subdivided too for the tenants, there the value of the land was enhanced far above the cost of apportioning and fencing. In no country in the world are there such fences as in England, and most of the living ones pay for themselves—the wood cut out, selling (for firing) at more than pays the scientific "hedger and ditcher." The writer of this article had the hedges around twenty-three fields cut

one winter, the former tenants having neglected to have them cut and laid for many years; and this was done by an agreement in writing with several hedgers and ditchers, who agreed to cut and lay the hedges properly and clean out the ditches, for the wood which would be left after they had wattled sufficient in to remain strong enough to keep stock from rambling, and they did well by the job and made good work; while the mud, &c., thrown out of the ditches, after sufficient had been thrown on the banks among the roots of the hawthorn stumps to make them the better, was hauled and mixed up with gas lime and other heavy matter, making compost enough to dress heavily more than 100 acres of the greensward. These hawthorn hedges are good fences, when kept cropped off with shears or hooks annually, around arable land, and they are splendid fences around permanent grass fields, when "cut and laid" every ten years; and when they are about from eight to fourteen feet high, there is nothing shelters a country like them.

The dairying districts, the grazing and the ploughed portions of the country, are all, but in a very few cases, fenced with the hardy hawthorn. On light hilly tracts of land, such as the Cotswold Hills, &c., there are stone walls, because the subsoil is not favorable for making good hedges.

USELESSNESS OF AG'L MACHINES.

When all disputed questions are settled; when every man agrees perfectly with every other man in everything; when variety is no longer the spice of life, what a spiceless, flat dish agricultural and every other "life" will be! And yet some people condemn agricultural papers, and all scientific investigations, because every question is not settled, every doubt removed, all variety merged into a dead certainty, and somebody authorized to say to every other body, "This is the way, walk ye in it." These reflections were suggested by reading an article in the St. Johnsbury, Vt., *Times* on the proper time and best manner of curing hay, which closes with the following hit at modern hay-making machinery.

Farmers have been shamefully defrauded by venders of machinery for haying. Much of it is worthless; to a small farmer, all of it. There are none but those who farm upon an extended scale, that can afford a mowing machine. On large fields, it is true, they work well with such as know how to use them, but even here where men depend upon hired help, they are of little or no value.

As much hay can be cut down in the forenoon as can be raked and carted in the afternoon; but they argue that men allowed to shirk and rest in the forenoon will take hold sharp in the afternoon. I can't see it. I have tried both ways, and my experience is that work can never be satisfactorily accomplished unless everything connected with it bears the impress of business, live, energetic business. A man that is lazy in the forenoon will be lazy in the afternoon. Again the machine mows too much, and hay is left in every conceivable shape at night. Men that finish haying early always leave things in a tidy state at night, if the weather looks ever so fine. It costs $125 every three years for a machine and the interest on it. It takes hay and grain to keep a pair of horses in the barn, and the worst of it is—and we can cite numerous instances—men that would have their hay out of the way in three weeks' time by the old method, are four and five by the new.

Horse rakes and tedders are only worse than mowing machines. By the time hay is fairly in the barn now-a-days, it is robbed of all its natural fragrance, everything that makes it pleasant and agreeable to the nostrils and stomach of the dumb beast. It is trodden into the earth, broken, bruised, dusty, dirty and commingled with every species of filth imaginable. The only real argument in favor of any of these implements is, they tend to clean our fields. I know nothing of horse-fork. Don't want to.

NOBLEMEN AT WORK.—Few of us have any idea of the fondness of the English aristocracy for real hard work in their gardens and grounds. Earl Vernon, formerly President of the Royal Agricultural Society of England, would work all day, hoe in hand, with his laborers, and as hard as any of them. The writer of this paragraph has seen his nephew for hours, axe in hand, thinning out his own plantations; and once saw him with the Duke of Wellington, both together with a cross-cut saw, cutting down a large Buttonwood.

These reminiscences are called up by an American correspondent who recently visited Mr. Gladstone, the English Premier, at his home at Hawarden, and who found him hacking away a Beech fourteen feet in circumference. He takes great pride in his ability to do hard work, and believes, the correspondent says, that physical exercise induces a good appetite, and that this again reacts on mental vigor.—*Gardener's Monthly.*

NOVEL HORSE COLLAR.—An important improvement in the manufacture of horse collars has just been devised by a Philadelphia mechanic. The collar being stuffed with elastic cork, is light in weight, and adapts itself to the shape of the animal as readily as if it was moulded. It is highly elastic, does not chafe or gall the neck, and the cork being a non-conductor, injury from the heat is prevented.

[Entered according to Act of Congress, in the year 1870, by R. P. EATON & CO., in the Clerk's Office of the District Court for the District of Massachusetts.]

RURAL ARCHITECTURE.

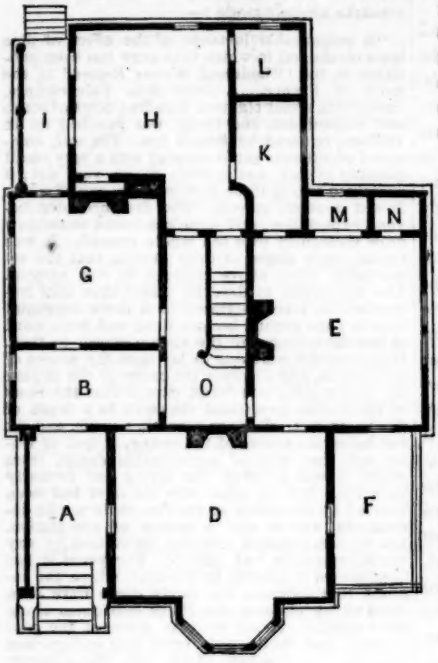
BY GEO. E. HARNEY, Cold Spring, N. Y.

DESIGNED AND ENGRAVED EXPRESSLY FOR THE NEW ENGLAND FARMER.

No. 5.---A HOUSE FOR A PHYSICIAN.

A design similar to the one here presented has just been finished in Morristown, N. J., for a physician; but the plan is equally well adapted for any family requiring the given amount of accommodation. It is located on a village lot, on one of the principal streets, and stands back about thirty feet from the front fence, and a drive way passes along the left-hand side to the stable, in the rear. From this drive way a path branches off to the front steps.

The entrance is sheltered by a veranda, A, eight feet in width, and the double doors of the entrance open into a large vestibule, B. An arch separates this vestibule from the staircase hall, which is C, measuring eight feet by about seventeen; it contains stairs to the chambers and cellar. D is the parlor, measuring fifteen by nineteen, and having a pleasant bay window projecting from its front. At the right is a balcony or terrace, F, reached by means of a casement window, and on the left is the veranda, which is also reached by a casement window. E is the dining room, fif-



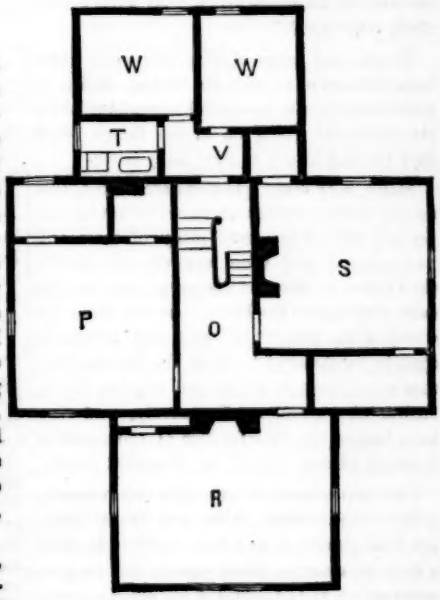
Ground Plan.

teen by seventeen, communicating with the hall and the parlor, and also opening upon the terrace, F. It has a recess, M, for a side-board or a seat, a china closet, N, and is connected with the kitchen by the large pantry, K, which measures about six feet by twelve, and is fitted up with shelves and cupboard. The kitchen is fourteen by fifteen feet. G is the doctor's office, thirteen feet square, which may be used as a library under ordinary circumstances. L is a large store-room fitted up in the usual way, and I is a back stoop or entrance way to the kitchen. The rooms in the kitchen wing are not so high as those in the main house, and the rooms over the kitchen are reached from a landing in the staircase. These comprise a bath room, T, fitted up with tub and water closet, and two small bed-rooms, W, W, for children or servants.

O is the main hall of the second story, from which the attic stairs rise in continuation of the main flight, though narrower. P is a chamber, thirteen by fourteen, having a dressing-room and a large closet opening from it. R is a chamber over the parlor, and of the same size. S is fifteen feet square, and has a dressing-room attached, as well as a large closet.

The third, or attic story, is in one large room, though there is ample space for three good chambers, which will finish about eight and a half feet high.

The first story is ten feet and eight inches high, and the second nine and a half. There is a cellar under the whole house, with a stone wall and a brick underpinning. The first floor is raised about five feet above the grade, and below the brick work is a banking surrounding the whole cellar wall. The house is of frame, boarded and clapboarded, and filled in with bricks, and the roof slated. The finish is simple throughout, but the whole house is a thorough and substantial piece of work. It was built by contract, at a cost of about six thousand dollars, which may be varied somewhat, depending upon finish, and comparative cost of labor and materials.



Chamber Plan.

DRYING EFFECT OF PINE AND FIR TREES UPON SOIL.

One of the clear evidences of a healthful progress and prosperity in rural life, is the tendency among our people to *ask questions*. No man seems contented with his present success, however complete and gratifying that may be. The sculptor will not rest until he makes the marble under his hands breathe; nor the physician, until he can take you entirely into pieces, and put you together again just as good as ever. The manufacturer of the cloth we wear, is not satisfied by clothing us in the finest wool, but ransacks the world for some finer and softer material, so that we may soon expect to see a suit made of thistle's down, or the fur from a fly's foot. And the *farmer*, too, has become inspired. He is not now satisfied with turning over the furrow because it makes the hoeing easier, but inquires,—"What else is going on in that clod? What are the frost and rain doing there? What office does this sand and these pebbles perform? How came the bone that Carlo buried in the garden ten years ago, a complete net-work of roots? Why was the wheat crop in the old lime-kiln lot three times as large as we ever raised in any other field? Why have pines covered the lot where white oaks were cut off three years ago?"

These, and many similar questions, come from farmers now, with an evident desire to know more of the wonderful operations which are constantly going on in the things which they see and handle in their daily labor.

Many, very many questions are asked, that no one is wise enough to answer; but at the present rate of research, many of them will be answered, and those answers will enable the farmer to increase his crops, and at the same time lessen his labor. At one time the question was put, "Can wool and cotton be spun by machinery?" Mills for the manufacture of all sorts of cotton and woollen cloths, answer the question affirmatively, and they have hushed the cheerful hum of thousands of spinning wheels around the domestic hearth.

Constant observation, thought and research, added to industrious habits and frugal lives, are what elevate us as a race, and it is as much a duty to exercise these powers and to progress as it is to be faithful in any other respect.

Reading the following article upon the *drying effect of fir trees* upon soil, suggested the remarks already made:—

"A remarkable instance of the effect of pine trees on the soil in which they grow has been published in the '*Woods and Waters Reports*' of the north of France. A forest near Valenciennes, comprising about eighteen hundred acres of scrub and stunted oak and birch, was grubbed up in 1843 and replaced by Scotch firs. The soil, composed of silicious sands mingled with a very small quantity of clay, was in some places very wet; it contained two or three springs, from one of which flowed a small stream. The firs succeeded beyond expectation, and large handsome stems now grow vigorously over the whole ground. It was in the early stages of their growth that the remarkable effect above referred to was noticed. The soil began to dry, the snipes that once frequented the place migrated to a more congenial locality; the ground became drier and drier, until at last the springs and the stream ceased to flow. Deep trenches were dug to lay open the source of the springs, and discover the cause of the drying up; but nothing was found except that the roots of the firs had penetrated the earth to a depth of five or six feet. Borings were then made, and six feet below the source of the spring, a bed of water was met with of considerable depth, from which it was inferred, the spring had formerly been fed. But in what way its level had been lowered by the action of the firs could not be determined, and is still a matter of speculation. But the fact remains and may be utilized by any one interested in tree culture. For years it has been turned to account in Gascony, where the lagoons that intersect the sandy *dunes* have been dried up by planting the *Pinus maritimus* along their margin. Hence we may arrive at the conclusion, that while leafy trees feed springs and maintain the moisture of the soil, the contrary function is reserved for spine or needle-bearing trees, which dry the soil and improve its quality."

For the New England Farmer.

SOME CASES OF BAD FARMING.

In travelling through several of the adjoining towns within the last two months or so, for the purpose of purchasing tobacco, I have been somewhat surprised to see in what a thriftless way some farmers conduct their operations. Perhaps some one better posted in these matters, could state them better than I can, but as I live where the saving of manure is one great object, the wastes of this article alone would afford a theme for an article.

But there are other ways in which thriftlessness is demonstrated. I saw cows last fall standing out in the cold storm, curled up on the windward side of a stone fence, or outbuildings,—shivering, pinched, sorry looking creatures,—and I have often wished that their very humane masters might have had a berth beside them. Then again they have been noticed trying to fill themselves on the frozen grass that they could pick on the already closely fed mowing lots. One day noticing a man endeavoring to keep the half starved cows back in the mowfield, I had the impudence to ask him what benefit he supposed the cows were getting from eating such old frozen

stuff as they were endeavoring to gather? He replied, "Well, I don't know, but I thought that they would pick up part of their living out there." But what possible good can it do them? Said I, It seems as though you would have to give each animal a good dose of salts, along with such feed, to ever get it though them. It don't pay to keep cows in that way, my friend. In order to make good sweet butter, good rich wholesome food has got to be furnished them, with a good warm, comfortable stable, fresh pure water, and kindly care.

And then, to think of the damage to the mowing land, to have it browsed all the fall, and then because of the open winter, to feed it all winter too!

And please bear in mind, that where cows are allowed to roam around and browse, the young cattle and sheep are treated in the same manner, and often the colts, if the farmer has any. In my estimation, the loss is, first, in the animals themselves, for they will not grow, or certainly not much; they come out poor in the spring, and will not begin to grow until the first of July or thereabouts, and the milk and butter is poor in quality, and small in quantity. Secondly, the manure, that might have been accumulated if the stock were stabled, is nearly lost. And, thirdly, the damage to the mowing lots is no inconsiderable item. Unmanured mow lots should never, in my opinion, be pastured. When will such farmers learn wisdom?

Then in some yards the manure is all exposed to the bleaching process—exposed to rains, winds and washing. It seems as though cheap sheds could be constructed where no better or more permanent covering can be had, and thus much waste saved. Where practicable, cellars should be made for the purpose of storing the manure accumulating upon the farm. One cord of manure taken from such repositories is actually worth two cords of these waterlogged heaps, thrown as they too often are, directly under the eaves, so as to make sure of a more thorough washing and drenching. Yet, would you believe it, Mr. Editor? I can point to at least *one* such specimen of thriftlessness in a prominent member of a Farmers' Club, not over a hundred miles from the famous "Wapping Farmers' Club" place of meeting. I really hope that a hint of this kind, will prove sufficient to stir up the members of this famous club, to an exhibition of better husbandry in their midst. We that are in the habit of preaching so much, and *so well*, ought to practice what we profess, or the world's people will turn up their noses at us.

Then another almost infallible sign of thriftlessness is seen in the case of a farmer who has abundance of wood on his own land, but so manages as to have only a small load of green wood hauled up at a time, and only chop it as it is wanted for immediate use. Likely enough when he gets out of bed he has to run out and chop into, and split off a few sticks from the *log*, before he can start the fire, or leaves it to be done by the boys, or worse than all by his poor wife.

But hold on, this theme is inexhaustible, my paper is more than full, and I will stop where I am. FRANKLIN COUNTY.

No. Hatfield, Mass., March 3, 1870.

REMARKS.—This article was accidentally crowded into a back corner of the copy draw; but its publication now, though not on time, is perhaps more seasonable than it would have been in March. The horse had been stolen, and locking the door then would do little good. Now is the time to begin to make ready to avoid the mistakes, errors, and bad management exposed by "Franklin County."

For the New England Farmer.

MUTUAL BENEFIT ASSOCIATIONS.

Nearly all the professions and different occupations of mankind have long had organized associations for instruction and mutual benefit. The legal profession has its bar meetings for the purpose of consultation, advice and mutual study of technical points of law; the medical profession has its medical society, and meetings in which the different modes of practice are discussed and dangerous cases of diseases are considered; the clerical profession has its associations and convocations, in which the interests of the church are considered and the best means of advancing Christianity are discussed; and so on through the catalogue,—all appear to be connected together in their efforts to advance their several interests, as a class. Even the common people of our country towns associate in lyceums for the purpose of intellectual improvement, by means of debate, lectures, &c., and associations of mechanics and artizans exist all over the country.

Farmers, however, have heretofore formed an exception to the general rule, as our County and State Agricultural Societies are too general in their organization and objects to be classed as mutual benefit associations. Farmers' Clubs appear to be better adapted to the purpose, which it is to be hoped will soon become the rule, rather than, as now, the exception.

The questions very naturally arise, are they a source of improvement and benefit to their members, and if so, why are they not more generally organized? Regarding the first part of the proposition, there could scarcely be a doubt that benefit is derived from such associations. In the first place it is supposed that all persons so associated are reasonably intelligent farmers, and engaged in agricultural pursuits; and in the second place, that each

individual member, while engaged in his avocation, pursues a course peculiar to himself, and in some respects unlike all the others. Now at the club meeting, as any subject is presented, each individual will of course relate the results obtained from his peculiar system of cultivation. It follows, then, that the best possible results in that vicinity are made known, and as a matter of course, each individual having learned the process by which the superior result was obtained, will be likely to adopt the same course as nearly as circumstances will allow, not only in respect to a single crop, but to all farming operations. Here, then, is an exchange of experiences; a commerce of practical facts, and no person will attempt to deny that an exchange of ideas, whether relating to agriculture or any other subject, promotes mental improvement.

Again, it is a self-evident fact that practical experience is the most valuable, especially to the farmers; and in the farmers' club there is, so to speak, a fund of really practical information, garnered from innumerable sources, from which each member may draw something for his own benefit.

Much benefit may also be derived from the club exercises, in a social point of view. It is a fact to be regretted that as a general rule farmers, in consequence of the isolation occasioned by their occupation, are less social than most other classes, and if any method can be adopted whereby this evil, which certainly is an evil, can be eradicated, it should be deemed an important consideration as affecting the well being of society in general. The more intelligent the farmer, the better prepared is he to understand and apply the principles of agriculture, and in fact the advancement of the age demands that the farmer should be a thoroughly educated man, and the greater the amount of information that he receives, the more susceptible is he of receiving. At the present time, book farming, as it is called, is growing more popular. Now, what is book farming but pursuing the methods of others that have proved successful and have been recorded in print?

Then why are not farmers' clubs more generally organized? One reason which undoubtedly might be given is, that in most cases the farmer feels that his whole efforts must be put forth in the cultivation of his crops and the general management of his farm. This arises from a sort of morbid state of intellect, perhaps partly the result of severe labor. This ought not to be so. There is no farmer that cannot, if he chooses, easily spare an hour or two each week for the improvement of his mind, especially if he keeps a close eye to business, and looks well to it that every thing requiring to be done should be done at the proper time. Twice, yea thrice as much time as an attendance upon agricultural meetings require, is lost from not attending to what requires to be done at the proper time and place. And, not unfrequently, the same men who would be the first to declare that they could not spend time, when asked to attend an agricultural meeting, or to help form a farmers' club, spend one, two, and even three evenings in a week in the grocery or post office. It is undoubtedly a fact, that all great reforms have been brought about by agitation, and that too, when at the outset, obstacles appeared almost insurmountable. Now, as what man has done, man can do, let the agitation of the subject of farmers' conventions or clubs be continued until the day shall dawn when agriculture shall be acknowledged to be, as it truly is, the most healthy, the most honest, and the noblest occupation that has ever engaged man's attention.

W. H. Y.

Massachusetts, 1870.

BUTTER MAKING.

From the abstract in the *Maine Farmer* of two lectures on butter making, delivered by Mr. Willard, in his late course of lectures at the Maine Agricultural College, we copy the following, which may afford some hints to farmers who wish to improve the quality of this article of their productions:—

In one quart of cream there are from 13 to 15 ounces of butter. Mr. Horsfall states that a good cow fed on grass will yield one pound of butter for a quart of cream, and that when his cows have been fed on rape cake and other substances containing oily particles, their milk has yielded from 22 to 24 ounces of butter for a quart of cream. The first portion of cream that rises is rich in butter. About 60 degrees is the temperature at which cream should rise. All utensils used in butter making should be thoroughly cleansed. Good cream is often spoiled in the churn by a taint left in it from imperfect cleansing. The cream should be agitated regularly. If the churning is carried on too rapidly the butter will be made and unmade, and if too slowly the particles of butter will not be set free. The best temperature at which butter is made is 55 degrees. The most desirable condition in which butter exists is that of a waxy consistency. It is then easily moulded into any shape. It is not always necessary to taste butter to determine its quality. Its smooth, unctuous feel indicates its richness of quality, its nutty smell indicates a good flavor and its bright glistening cream-colored surface indicates its state of cleanliness.

When the butter has formed and has been taken out of the churn, it should be thoroughly cleansed from buttermilk. The less the butter is handled the better. Warm hands, however clean, are apt to impart a taint. A butter ladle should be used in all the manipulations. A spring-house should be used whenever convenient. Cream should be churned

rather than whole milk. The quality is of the highest importance and should never be sacrificed to quantity. Poor butter does not pay. The milk should be set at a temperature of 62 degrees and never above 75. When spring-houses are not convenient, the Jennings pan can be used, which is a pan for receiving the milk set in a larger pan containing water. The cream should be taken from the milk before old and sour. Butter which has been churned quick will not keep well as there is not a complete separation of the caseine cells. If the butter was entirely free from caseine, salt would not be required.

The time of churning should be at least from 30 to 40 minutes. The butter-makers of Orange County, who make one of the best articles in the world, churn from 45 to 60 minutes, using the common churn which is regarded as the best. The Chester County, Pa., manufactories make the celebrated Philadelphia butter which sells at $1.00 per pound. In Orange County, instead of a shallow pan for setting the milk, they use a deep pan, with a tunnel-shaped skimmer for taking off the cream. The point in favor of a deep pan is, that the tough surface is prevented from forming on the surface of the cream, there being less surface exposed to the air.

Butter is oftentimes spoiled by smoke. Potatoes, herbs, roots, &c., should not be placed near milk. Soft woods are bad for firkins. Ash contains an acid which is deleterious in its effect. White oak is good. Dampness of the nature of mould should be avoided in the milk room. Pans should not be placed, the one above the other.

Butter Factories.

In butter factories a barrel and a half churn is used. Into this churn 50 quarts of cream are put and then diluted, with cold water in summer and warm in winter. The quantity used being from 16 to 30 quarts at each churning. Ice should never be used unless the temperature rises above 64 degrees. Eighteen ounces of salt will be sufficient for 22 pounds of butter unless wanted for keeping, when a little more should be added. To prepare the firkin for the reception of butter, soak it in cold water, then in hot water and then again in cold water. It should then be filled with butter and strong brine poured on. Washing the butter removes the caseine and consequently secures butter that will keep. Butter should be stored in a dry cellar, free from other articles which might taint the butter.

Skim-Milk Cheese.

There is more profit in butter and skim cheese than in making whole cheese. When skim-milk cheese is to be made, all of the cream is not removed when wanted for churning. The morning's milk should set twenty-four hours and the evening's twelve hours. To make skim-milk cheese, raise the milk in the vat to a temperature of 82 degrees. Add sufficient rennet to coagulate the milk in 50 or 60 minutes, then cut and break the curds; after they have subsided, gradually raise the temperature to 96 degrees, stirring the curds meanwhile. Then withdraw the whey and remove the curds, after which manipulate as with whole milk curds. It is found that twenty-eight pounds of milk will produce one pound of butter and two pounds of skim-milk cheese. The average quantity of milk, however, required to make one pound of butter is twenty pounds. If the skim-milk is to be used to make cheese, it should not be allowed to sour.

Analysis.

Buttermilk, as examined by Berzelius, contains cheesy matter 3.4, and whey 92. Cream of average quality yields 24 per cent. butter. Analysis of cream give water from 74.46 to 61.67, butter from 18.18 to 33 43, caseine from 2.69 to 2.62, milk sugar from 4 08 to 1.56 and mineral matter from 59 to 72. Nine pounds of milk on an average will make one pound of cheese. The whole milk should be churned, if at all, at a temperature of from 60 to 65 degrees. There is more labor in churning whole milk than there is in churning the cream.

Color.

One market requisite for butter is that it have a good golden yellow color. Butter from hay has a light color. Butter is largely colored with annatto for market. To color butter in late fall and spring, feed upon early cut hay, carrots and oat and corn meal, and no artificial coloring will then be needed. Carrots give a rich yellow color to the butter. Annatto when used is put into the cream in order to color the butter.

Little Things

Have much to do in dairy management. Due attention must be given to pasturage, to the cows, to milking, to setting the milk, to churning the cream, to working the butter and to packing and storing. Cream readily takes up odors and consequently should never be allowed to stand in the kitchen where culinary operations are going on. The food upon which a cow is kept influences the time of churning and the quality of the butter. Milk produced from food rich in nitrogen produces cream which does not require so much time in churning as the cream from milk produced from food wanting in nitrogen. When neither grain nor meal is fed to cows, the cream must be churned at a higher temperature than when the cow is fed upon food rich in nitrogen. If milk is allowed to freeze and thaw or to fall to a low temperature while setting for cream, butter cannot be so speedily brought. It should never fall below 50 degrees. Potatoes may be fed in fall and early winter, but grain or meal should be added with good hay the latter part of the winter. Butter is often spoiled by imperfect washing, giving it a mussy look and a lardy taste.

The term grain as applied to butter implies a waxy appearance. Butter which has a good grain can be drawn out. When the grain has been injured the butter will indicate a greasy appearance. In working butter, it should not be ground against the tray, as the grain will thus be destroyed. The buttermilk should not all be worked out at once. In salting, one important point is to get good salt. The salt should be kept in a dry atmosphere. The flavor of salt is very much affected by the manner in which it is kept. The best of butter will invariably be injured by poor packing. In factories where gilt edged butter is made, especial care is taken in packing the butter. A cellar used for storing butter should be used for nothing else.

These things may seem small but they invariably influence the quality and consequently the price of butter. A good article commands a good price, and it will pay to regard all the minor details of butter-making as worthy of attention, as on them depends the value of the product.

CASH VALUE OF A LABORING MAN.

We find the following article in the *South Home*, credited to a "Northern Exchange:"—

It is often remarked of persons who do not possess any property, and who depend upon their daily labor for support of themselves and families, that they are "worth nothing" financially speaking. This language is generally indulged in by men in the community who style themselves business men, and who get rich off the necessities of other men. Let us examine the question financially, and see if their assertions are correct.

Last year the price of common labor averaged $1.50 per day. Admitting that the laborer received $1.50 per day, and it required the whole of that sum to support his family, nevertheless we contend that the laborer was worth in cash to his family the sum of $7989.

The amount he would receive for one year's labor, at $1.50 per day would be $475.60, which amount would be the interest at six per cent. on $7989, which latter sum would be the cash value of the laboring man to his family.

The cash value of the laboring man to the community is much more than the above-named sum, as labor is the only true wealth to any country. Without labor our forges, furnaces, woolen mills, and indeed manufactories of all kinds, would cease to be. The music of the loom and shuttle would be silenced forever. Our national and other banks would close their doors, and our most enterprising merchants take in their signs. Without labor civilization would recede, and the bat and owl would soon occupy the crimson chambers of our would-be business men.

Let the laboring men of the United States realize their true position. Let them reflect that labor is honorable—that labor is wealth. Let them remember that they are a power in the State—that to them this great Government is indebted for all it possesses of liberty, glory, grandeur.

"Let them not only reflect" that labor is honorable, but let those who look down on the humble laborer and mechanic reflect for one moment before they speak in terms of disparagement of the "hewers of wood and drawers of water." The custom is too prevalent in the community of making remarks in a sneering manner of the great industrial class of our people, leading youths among us to think that honest industry is not honorable, be it what it may. That time has passed, and the South is too poor to indulge in such sickly nonsense; she needs labor of all kinds. Honest, industrious mechanics and laborers are the wealth of States, and until they are encouraged and fostered, our people cannot be prosperous. It is not the cash value alone by which he enriches the place of his residence but he adds by his labor to its material wealth; no country or nation that commands the respect of the world, but what that respect was gained through the skill of her mechanical population. Then let all classes, more especially the rich, respect and inculcate their children with the true theory of life, that labor is honorable, and if in after life misfortune should overtake them, willing hands will be put forth to earn their support. a5/0-

---

BEES AND FRUIT BLOSSOMS.—E. Gallup, in *Western Pomologist* says that "the facts of the case are, that instead of the bees injuring the fruit blossom or crop in any case whatever, they are an absolute assistance. So much so, that in the immediate vicinity of an apiary in some seasons, there will be an abundance of fruit, whereas in localities where no bees were kept, there was comparatively little. Bees are a great assistance in fertilizing blossoms that otherwise (or left to nature) would not become fertilized, and the clover or buckwheat patch that produces the most honey, produces the most seed, invariably. The honey in the blossom, if not taken out by the bees and other insects, would be dried up by the sun or washed away with rain, consequently would be a dead loss; but if we have bees to gather it, it is so much gain, not only to the owner of the bees, but to the fruit grower and the farmer."

EARLY CALVES.—A correspondent of the *Country Gentleman* says:—There is a good deal more depending on an early start than is generally supposed; yet every farmer who has raised stock must be aware of the advantages attached to a calf or a colt born in March or April, over one not coming into existence till June. The early young animals become strong against their first winter, and

go through the cold spells without the check those that are younger or tenderer receive, and having gained a good clear start, they will never lose it, and it is the same with lambs, pigs, and young poultry. How attentive to this matter should those be who possess highly bred stock, for if it is worth consideration with good common stock, it must be of immense importance to those who breed animals coming to be worth as many thousands as the average grades are hundreds. In England the winters are very much milder than in the Northern States; yet this is seriously studied with every variety of live stock, for the first winter is the most critical period of agricultural animals' existence, and when the young stock is brought to grass at about fourteen months old, plump and fat as they can be, to be perfectly healthy and growing, there is an end to all anxiety concerning them."

NEW PUBLICATIONS.

AN ADDRESS on the Natural History and Pathological Osteology of the Horse. Delivered before the Annual meeting of the Connecticut Board of Agriculture at Middletown, January, 1870. By N. Cressy, M. D Illustrated. Hartford: Chase, Lock & Brainard. 1870.

What is known of the horse in its *paleontological* lineage, as gathered from remains in the Miocene and Drift formations, is here given, in connection with its more modern history, as introductory to an essay on the diseases of the bones of the horse.

Ringbone, Splint and Spavin he regards as only different names of the result of the morbid process of bony growth, called *exostosis*. By this word is meant any bony growth or tumor which affects the *periosteum*, another hard word which means, according to the dictionary, a fibrous membrane covering or investing the bones, and which seems to be as necessary to the health of the bone as the skin is to the health of the flesh. He says, in a case of acute exostosis—or ringbone, splint or spavin—or where it is primarily developed without any hereditary predisposition on the part of the immediate parentage, this disease usually occurs as the result of an injury, either from a blow or a strain. An inflammation follows, and an extra quantity of blood, laden with salts of lime, is brought to the part, and thus the periosteum (or bone skin) and the surrounding tissues is thoroughly congested. Eventually the phosphate and carbonate of lime becomes deposited within the periosteum at the seat of injury, and a hard, unyielding, bony tumor is the inevitable result. All of these affections may be developed from similar exciting causes, or from an inherited constitutionality. And as a remedy to alleviate the suffering and control the progress of the disease, I would earnestly recommend a preparation of Colorless Iodine Liniment that I have used for several years with marked success in human and veterinary practice. Cases of hereditary ringbone that appear early in a colt need no treatment, for their only cure consists in hastening the *anchylosis* of the joint, which, of course, forever obliterates the freedom of motion there, by soldering the two articulating bones together in firm osseous union. Even with such a cure the creature ceases to limp, because the impaired motion of the joint that caused such excruciating pain in walking has been destroyed.

TWIN HEIFERS.

Our correspondent who inquired some weeks since whether there was any good reason for the idea prevalent in his neighborhood that twin heifers were not reliable as milch cows, and those other correspondents who replied that they had had good success with such animals, will read the following statement from the veterinary editor of the *North British Agriculturist*, with interest:—

Calves born as twins, when of the same sex, breed as regularly and readily as those which come at a single birth, and often inherit the fecundity of their parents. When, however, a bull and heifer calf come together at one birth, the heifer, in a large proportion of cases, never breeds. Such animals, spoken of by old Roman writers as Tauræ, are popularly known as free martins, and often assume masculine characters, are short and rough-like about the head, but seldom have any appearances connected with their generative organs sufficient to account for their not breeding. A few of these martin heifers do, however, breed, but probably not more than two out of every eight or ten. Bulls born along with heifers do not seem to labor under any disadvantage in procreating their species. It has been stated, but without sufficient evidence of fact, that the martin heifer is more likely to breed if she happens to be born before instead of after her twin brother.

TO USE THREE HORSES ABREAST.—As it is becoming quite common to use three horses now instead of two, perhaps it would be an advantage and a saving to some of our young farmers to tell them how to hitch up three horses, with an equalizer that, instead of costing five dollars for a patent article, can be made for a few cents. I take a piece of two by four, or two by five, scantling and bore first a hole *near* each end, as I would for a double-tree; but the piece need not be over nine to 12 inches long; then bore a hole one-third of the length from one end and two-thirds the length from the other end, and attach the piece by a clevis and ring to the plough clevis, the *longest end up*; then hitch my middle horse to the top, and the team to the bottom end, or short end of the equalizer—using a long doubletree for the team, long enough for a horse to work in the middle. By using this simple device, a saving can be made of five dollars, and the equalizer is, I claim, better than any other, for the simple reason, that it brings the team nearer the nose of the plough beam and consequently nearer the work.—*Western Rural.*

THE CAT BIRD AND CHEWINK.

Of all the birds which inhabit our woods and pastures none are better known than the Cat Bird and Chewink, or Towhee, as the latter is often called. The Cat Bird had a bad name with the associates of our boyhood. It was accused of killing bees and robbing other bird's nests, and was consequently persecuted and abused by us as an enemy and outlaw. We believe that this treatment was unjust, and that this poor bird was the victim of calumny, suspicion and slander,—a misfortune which is by no means confined to birds. We now regard him as a friend to the farmer, and his kitten-like mew is more musical to our ears than when we regarded it as the cry of an adversary that challenged our slings and shot-guns.

Mr. E. A. Samuels, who has carefully watched this bird and studied its peculiarities, makes no allusion to these vicious habits, and we presume that it has been wrongfully accused.

That the boys of the present day may better understand the habits and character of the birds that sing such songs and pipe such notes as their Creator has fitted them for, and which feed on insects injurious to vegetation, we present the above illustration of the Cat Bird and Chewink, with a description of both, copied by permission from Samuels' "Birds of New England."

Of the Cat Bird he says:—

This very common and well-known bird arrives in New England about the first week in May,—in Maine, perhaps about the 15th of that month. It is distributed abundantly throughout these States, and its habits are well known. During the mating season, and

indeed through the greater part of the summer, the song of the male is heard in the woods, pastures and gardens at early morning, and sometimes through the day; and, although most persons describe it as being harsh and uncouth, it is really very pleasing and melodious. It is a sort of medley, like that of the Brown Thrush, but not near so loud; the bird usually perches on a low tree, where, standing nearly erect, his wings slightly expanded, and his tail spread beneath him, he pours forth his notes sometimes for half an hour at a time. In addition to this song, he, in common with the female, has a plaintive note almost exactly like the mewing of a cat; and the specific name of *felivox*, given it by some authors, is much more descriptive and appropriate than that of *Carolinensis*, which is neither descriptive nor proper.

The alarm-note is a rattling cry, like the sound of quick breaking of several strong sticks; it is perhaps well expressed by the syllables *trat-tat-tat tat*, uttered very quickly. I have noticed that this bird, as do many others, prefers the neighborhood of thickly settled districts, even a home in their midst, to others of a wilder character; and, when travelling through the deep forests, I have invariably found, that, when these birds became abundant, a settlement was near.

Soon after mating, the birds build: this is from about the 20th of May to the first week in June. The nest is usually placed in bushes and shrubs, seldom more than four or five feet from the ground; the location is often in the deep woods as in the fields or pastures. It is constructed first of a layer of twigs and sticks, on which is built the body of the nest, which is composed of strips of grape-vine bark, fine twigs, leaves, and straws; it is deeply hollowed, and lined with fibrous roots and hairs, and sometimes fine grass. The eggs are usually four in number, sometimes five: their color is a bright, deep emerald green, and their form generally ovate. Specimens do not exhibit great variations in measurement from the dimensions of a nest complement of four collected in Thornton, N. H., they are as follows: .95 by .67 inch; .95 by .66 inch; .93 by .67 inch; .93 by .66 inch. Two broods are reared in the season, seldom three in this latitude.

About the middle of October, this species moves in its Southern migration.

Mr. Samuels' account of the Chewink is as follows:—

This beautiful and well-known species, although common in Massachusetts and the other southern New England States, is rare in the three northern. It begins to grow scarce in the northern districts of Massachusetts; and, before we have passed fifty miles beyond its northern limits, it is very rarely seen. It makes its appearance about the 20th of April, the males preceding the females by a week or ten days. As soon as the females arrive, the pairing season commences. The male perched on a low limb of a tree or high bush, chants his pleasing song, sometimes for half an hour at a time: this song resembles the syllables, *tow-hee 'che 'de 'de 'de 'de*, uttered at first slowly and plaintively, and quickly increased in volume and rapidity of utterance. He has also a sort of quavering warble difficult of description. If he is approached, he watches the intruder, and, after ascertaining his business, utters his note *tow-hee*, and proceeds his search among the fallen leaves for his favorite food of worms, insects, and seeds, which he is almost continually scratching for among the dead vegetation.

About the second week in May, the birds commence building. The locality usually chosen is in low, thick woods, or in thickets of briers and bushes near streams of water, in which places this species is most often found. The nest is placed on the ground, usually beneath a bunch of grass, or in a pile of old brush and fagots; it is constructed of fine twigs, leaves and grasses, and is lined with fine leaves of grasses, and sometimes a few hair-like roots.

The eggs are usually four in number. Their ground color varies from grayish to reddish-white: this is covered, over the entire surface with fine dots and points of red-reddish-brown: in some specimens these dots run into each other, and form small blotches. The average dimensions of a great number of specimens in my collection is about .94 by .76 inch. When placed beside an equal number of the eggs of the Brown Thrush, the eggs of this species appear much paler, and with a more roseate tint; otherwise, except with regard to size, the two species resemble each other much.

In New England but one brood is usually reared in the season. I have found nests with young in June and August, but generally the first brood leaves the nest too late for another to be brought out before the early frosts. About the middle of October, the old birds and their young, in small detached flocks, leave New England on their southern migration.

Wheat Turned to Chess.—A writer to the *Dixie Farmer* vouches that a person in his neighborhood has exhibited this season, wheat and chess growing from the same root. The bunch or stool on exhibition was carefully taken up, and all the soil washed from the roots, so as to give every one that examines, the opportunity of judging for himself. The stool, or bunch, consists of six stalks—three of them wheat, and three chess—all of them tolerably well-developed. No one that has seen this stool, or those exhibited by the same friend last summer, has a remaining doubt of the assertion that, under certain circumstances, wheat frequently turns to chess.

EXTRACTS AND REPLIES.

FANCY BUTTER.

Will you please give us a chapter on "*Fancy butter?*" Tell us all about the making, packing, marketing, &c., and explain why it sells in the market so much higher than the best New Hampshire and Vermont butter. W. J. HENDERSON.

Ryegate, Vt., July 12, 1870.

REMARKS.—We publish on another page an abstract of what Mr. Willard told the students of the Maine Agricultural College about butter making. This gentleman, in addition to what practical knowledge he may have gained in his own dairy, has spent much time among the best butter makers in this country and Europe; has even, we believe, visited the dairy of Queen Victoria, with its porcelain and its marble equipments, and we suppose he has told all that he can tell—not all that he knows—about butter making. There are secrets in this as in all other arts that can never be *told*,—they can only be *learned*. One man may know how to chop wood; another man may know how to set type. But what good will the *telling* of either do to one who never swung an axe or picked up type? We apprehend, however, that most of those who desire information upon the subject of fancy butter are making the same mistake that one Capt. Naaman, of the Syrian host, committed when he got into a rage because the prophet simply told him to "wash and be clean," when he expected to be bid to do some "great thing." Mr. Willard suggests few great things. "Little Things" are words which head his closing paragraphs, and we do not think he would be offended were these words to be used as a caption to the whole of his two lectures. "Small sands the mountain make, moments make the year, and trifles life," and little things, we suppose, have much to do with the quality of butter; little things out doors and little things inside; little things which imply a fancy farmer and a fancy dairy woman,—one can do little without the other.

But fancy prices depend on the freshness of the article as well as its intrinsic quality. The gilt-edged butter must be made near the consumer. It must be delivered often. The maker must have a reputation. "Mr. So and So makes *our* butter!" Just now it must be made from milk of Jersey cows, and if they cost from $400 to $1000 apiece the butter, you know, will be all the more fancy, all the more gilt-edged.

The best dairies of New Hampshire and Vermont do obtain prices which are decidedly "fancy" compared with those which an ordinary article commands. This is done in the first place, by producing a reliably good article; and, in the second place, by taking some pains to reach those who are willing to pay a good price for a good article. We know of dairies whose products are engaged at some ten cents a pound more than the ordinary price of what is called in market good butter.

This, we fear, is not such a chapter as our correspondent asks for, but perhaps it will serve as an introduction to the confession which we are obliged to make, that we are unable to answer his questions squarely and fairly. We shall be very happy, however, to serve as a medium for any one who can satisfactorily reply.

RUSSIAN WHEAT—VETCH OR TARE.

I have just cut a small patch of wheat from seed imported from Odessa, Russia. I found several plants like the one enclosed. Will it be a pest if domesticated, or is it already so? I never saw anything like it. The wheat was sown the last of August; it made a very good growth, but became badly beat down soon after heading, and never recovered. After I thresh and clean the grain I may announce the result. H. COLMAN.

Woodville, Mass., July 15, 1870.

REMARKS.—The plant was received in good order, and is doubtless one of the many varieties of vetches or tares common in Europe. The seeds are nutritive and are used in the same way as peas,—in fact it is one of the *leguminosæ*, or pea family. It does not seem suited to the climate of the United States, or rather our ordinary field peas and beans do better. Though called a "tare" we do not think there is much danger of its becoming a troublesome weed. We shall be glad to receive further particulars of your experience with the Russian wheat.

AFTERBIRTH.

Will you please to inform me through the FARMER what is the effect on a cow, of eating the "afterbirth," or "cleanings?" As is well known, there is a propensity in most, or all cows, to do this. A fine young cow (five years old) of mine, did this filthy deed on calving, about ten weeks ago. She has not suffered any harm from it as I can see. She has always before been troubled with swelled bag, but not this year. JOHN.

Franklin, Mass., 1870.

REMARKS.—When the ovum or germ cell of the female is impregnated by contact with the sperm cell of the male, it becomes developed into a sac containing the fœtus and a liquid called the amniotic liquor, in which the fœtus floats, attached by the funis or umbilical cord to the placenta, a soft spongy mass, consisting of fleshy cells and blood vessels. The placenta is attached to a portion of the inner face of the uterus by a membrane filled with blood vessels, through which nutriment is conveyed to the growing fœtus. The placenta and sac enlarge and thicken with the growth of the fœtus, and when the latter is fully developed and ready to be born, the former has become a large mass consisting of fleshy cells, blood vessels and tough membranes. During the process of delivery the placenta becomes separated from its attachment to the uterus, and in a healthy labor passes away soon after the fœtus. The contractions of the muscular coat of the uterus, called labor pains, generally cause a rupture of the sac containing the young, which consequently escapes and first passes away. Sometimes the placenta or

afterbirth, is not completely separated from the uterus until after the fœtus has passed, and consequently is detained for a time, longer or shorter.

Cows almost universally have a propensity to eat the placenta immediately after it drops away, if they can get at it. Whether this is owing to a saltish taste of the liquor, or for some other instinctive purpose is not known. They will also lick the entire surface of the calf, apparently to cleanse it, but probably because they like the taste of the slimy liquor in which it has been immersed and which adheres to the new born animal.

We have never known the eating of the cleaning to do any injury. Perhaps it operates as a cathartic, and thus gives the animal a relief which she feels that she needs. Cows and oxen, and even horses, will often eat salted meat and fish when they can get at them, and seem greatly to enjoy them, and we have never known any injury result. They are supposed to do this on account of the salt they contain. The amniotic liquor is said to contain a peculiar acid, which may possibly gratify the taste of the cow.

PITCH PINE NEEDLES.

Everybody knows how valuable are most leaves for manure, but I was always taught that pitch pine needles were poisonous to vegetation.

Some years, owing to the pressure of fall work, I have been unable to save as many leaves as I wished, until they had so decomposed as to be got only with difficulty.

I have been tempted to store the needles, as I can get them with the greatest ease and despatch, whenever the ground is bare; but owing to early teaching, have not yet done it. One argument urged against the needles is, that vegetation where they lie is alway scant; but it seems to me that this must be in consequence of the form of the needles, which causes them to lie so compact and in such bodies as to prevent the plants pushing through.

A year ago last spring I raked some needles from a strawberry bed. I then ploughed an adjoining piece for a new bed, and in one place ploughed in the soil a lot of the needles. Right in this mixture of half needles, half loam, some of the plants were set, and to my astonishment, produced much larger plants in top and root than elsewhere. Still the needles may have a certain poisonous nature, to which some plants may be susceptible of injury. Or the needles might have been more beneficial as a loosener of the soil (it was all loose soil) than injurious as a poisoner. Please state whether it would be well for me to store them for manure in winter?

If there is anything poisonous, it is probably in their pitchy nature. If not injurious, I would like to use all I could, and get them rotten in my manure heap. J. E. Blakely.

Remarks.—We have always supposed that the needles or leaves of pine were of little value as a fertilizer, but have never made any careful trial of them, and cannot answer our correspondent's inquiries from personal knowlege. The soil from which pine trees grow does not seem to be as well fitted for the growth of other vegetation, as that on which hard-wood trees grow and shed their leaves. Prof. Johnson gives a variety of tables of analyses in his book entitled "How Crops Grow," and perhaps the following extracts from them will afford some information. One hundred pounds of Red Pine leaves, when burned, gave 4.69 lbs. of ashes; same amount of Oak leaves gave 4.90 lbs; Beech, 6.75 lbs. The per cent. of several of the constituents of the ash of these several leaves is given as follows:—

	Potash.	*Soda.*	*Magnesia.*	*Lime.*	*Phosphoric Acid.*	*Sulphuric Acid.*	*Silica.*	*Chlorine.*
Pine	1.5	—	2.3	15.2	8.2	2.8	70.1	—
Beech	5.2	0.6	6.0	44.9	4.2	3.7	33.9	0.4
Oak	3.5	0.6	4.0	48.6	8.1	4.4	30.9	—

We should have little fear of any poisonous effects of the needles, composted as proposed, but as more than two-thirds of the ash of pine leaves are silica or sand, and of other leaves less than one-third; and as they also vary in potash, lime, &c., as indicated above, we should not expect that pine leaves would help the manure as much as oak or beech leaves.

CABBAGE WORMS.

I find the green worms are eating my cabbages very badly. I think there must be some insect that deposits nits on the cabbage leaf, especially on the under side. The worm is very small at first, but grows larger as it eats the cabbage. I read in your paper once that the eggs of a butterfly produced the worm. I think this cannot be so as it would require a greater number of butterflies than I ever saw to leave so many nits as I find on my cabbages. I have to pick the worms off and kill them every few days, or they would eat my cabbages all up. Now if you know of any remedy to get rid of them, please let it be known through your valuable paper, for it is a hard task to pick them off by hand when they are as plenty as they are this year. H. D. U.

Monroe, N. H., July 12, 1870.

Remarks.—Nearly all the caterpillars or worms which infest vegetation are the young of butterflies or moths. Each female butterfly lays from two hundred to five hundred eggs or nits. At this rate a few of them would be able to give a cabbage patch a good sprinkling of nits in a short time. In the article to which you refer the destruction of the butterfly or moth was recommended. Perhaps the remedies used for currant worms would operate with those on cabbages. If you have fine slacked lime, try a sprinkling of that on the leaves.

LAME COW.

Will you inform me what I can do for a lame cow? She was pricked in the leg, back of the gambrel joint, by a calf's muzzle last spring. It made her very lame. I bathed it in cold water, and she got over it. In the course of a week or two, she was lame again. I commenced bathing, and in two or three days she was apparently well. About a week ago she became lame again; this time I have used both cold water and a strong brine to no effect; it swells and is inflamed about the joint, and still grows worse. I think the injury was on the cord. L. H. C.

Middleboro', Mass., July 6, 1870.

Remarks. — Probably the wound extended through the skin into the cartilage, and most

likely there will be an abscess, which at the proper time, may require opening. You had better poultice at present.

A SICK COW.

I have a four-year-old heifer. She calved early in May, gave a good mess of milk for a while, but the last few weeks has gradually fallen off in her yield, and continues to daily. She is also very poor; her appetite is good, always seeming hungry. If you or some of the readers of the FARMER can inform me of what would benefit her, through its columns, I should be very grateful. J. T.

Braintree, Vt., July 4, 1870.

REMARKS.—This description does not enable one to decide what is the matter with the cow. One thing, however, is certain:—her food does not nourish her,—either it is not digested, or the proper organs do not take up the nutriment. Give her sulphate of iron, pulverized, one drachm, rubbed with ginger, one teaspoonful once a day. Some internal organic disease may have taken place.

AGRICULTURAL HORSE RACING.

Right glad was I to see that noble protest against horse racing at our agricultural Fairs, in the FARMER of July 16. Since the introduction upon our Fair grounds of the race course and the machinery, more or less complete, of the sports of the turf, I have had only one mind as to their final result,—which is that they will ultimately prove the subversion and ruin of our "cattle shows" and farmers' festivals, if not held in check or entirely excluded. Exactly what course to pursue under the circumstances I do not assume to advise. But this much I may say, the great object, the polar star,—agricultural progress,—must be kept steadily in view. Amusement and diversion should not be excluded, but the aim and goal must be the social, moral, and professional improvement of farmers. However efficiently and judiciously our Fairs may be managed, unquestionably there will be those who will find occasion to grumble and criticise. But with a firm purpose to encourage a healthy competition in honorable industry and superiority in productions, and at the same time to discourage every thing that tends to excite ambition to get a dollar without earning it squarely and fairly, we fully believe that our agricultural associations may do much to encourage and benefit farmers, and to show them and others that agriculture can stand alone and even walk without the leading-strings of any jockey club.

Farmington, Me., July 18, 1870. O. W. TRUE.

SIGNS OF THE WEATHER.

The writer has been a close observer of signs of the weather for a number of years past, which are far more reliable than any baromerer, he thinks, ever invented. All indications of rain are said to fail in a dry time. With such exceptions, the following rules are quite reliable.

1. The state of the weather during the last quarter of the moon, is a fair sample of what it will be during the remaining three-quarters, whether wet, changeable or dry.

2. When the spiders spread their nests on the grass so that they are visible in the morning with a heavy dew upon them, though a heavy vapor or fog may hang over the hills and not in the valleys —ominous of storms—yet the insect has shadowed forth with unerring instinct a fair day, though sometimes slight showers may fall. Some other habits of this cunning and intelligent creature are equally interesting, which cannot be noticed from want of space. Who has not, when travelling through a wood in the morning, in summer time, felt a tiny line drawn across his face, that was the highway bridge of the aerial traveller. At other times they will gather up the corners of their web, and like the aeronaut suspended from a basket will sail through the air to a new field of operations.

3. A heavy fog on the hills and little or none in the valleys, is often a fair indication of rain, although not perfectly reliable.

The following observations copied from the "Farmer's and Mechanic's Manual," are claimed to be reliable, which the writer has not fully tested to his satisfaction.

1. The nearer the time of the moon's change, first quarter, full, or last quarter are to midnight—from 10 P. M. to 2 o'clock, A. M.—the fairer will be the weather during the seven days following.

2. The nearer to mid-day or noon the phases of the moon happen, the more foul or wet weather may be expected during the next seven days. The space of this calculation occupies from 10 o'clock, A. M. to 2 P. M. These observations refer principally to summer, though they affect spring and autumn nearly in the same ratio.

Barre, Mass., July 4, 1870. CALEB RUSSET.

PROTECTING TREES FROM MICE AND BORERS.

In the winter of 1868-9 I lost sixty beautiful young apple trees out of my orchard of 180 trees, in consequence of the mice gnawing the bark. In the fall of 1869 I procured a roll of builder's tarred paper, cut into pieces 1½ feet by 2½ feet. I then coiled one of these papers around each tree, leaving a space of about two inches all around the tree, so that the atmosphere could circulate freely between the tree and paper. I then tied a small twine around the paper at the top and bottom to hold it in place. At the same time I placed about two bushels old chip manure about each tree, so that the first freezing weather in November fastened the manure to the paper, rendering it stiff and steady, thereby making a complete fortification against the little intruders.

Last April, after the snow was gone, I removed the papers and found *every one* of my trees that I had thus papered in a perfectly healthy condition and untouched by the mice. There were thirty trees in the same orchard which I did not paper, eight of which were completely girdled and killed by the mice. OSMYN SMITH.

Smith's Mills, P. Q., July 11, 1870.

Last fall, before the snow fell, I wound my young trees with felting paper, put as high as the snow was likely to fall. It was tied on at the top and bottom, also in the middle, with wool twine. All my trees thus protected came through the winter and spring uninjured, while those in by-places not protected were destroyed. Some of my neighbors did the same with like results. I had two apple trees in my fruit yard six inches in diameter, standing near a fence north of them. A severe north snow storm, the 16th of March, banked the snow up to the limbs of these trees. I directed my man to tread the snow down hard around them. He did it well; but when the snow melted away we found that the little hungry mice had girdled the trunk completely for eighteen inches above the ground. I have banked them up high with earth and they are bearing full this season, but I think they will die next season.

I have succeeded in keeping the borer from my apple trees for the last twenty years, by applying charcoal dust from old coalpit bottoms.

J. N. SMITH.

West Addison, Vt., July 12, 1870.

GOING ON TO A FARM.

Will you please to give your opinion, whether a man with only $500 could get a living at farming, allowing he should attend to his business? There are a number here with about this amount of capital, that think of moving back into the country and locating near each other, that they may assist one another in cultivating the land. Perhaps some of your readers can give us their experience in this matter. T. B. P.

Newburyport, Mass., July, 1870.

REMARKS.—We second the motion that this question be referred to "some of our readers." We have so often tried to express our opinion about the probable success of village and city people in farming, that we should much rather print the experience of those who have tried it, than to repeat our own views. As a general rule we think it is not advisable for men to change either business or location. The process of acclimation which change of location often implies, and of apprenticeship and adaptation which is inevitable in entering upon a new business, are neither pleasant nor profitable. Many village and city people who get a little book-farming knowledge into their heads, overlook the fact that farming is a trade, and entertain a vague notion that almost anybody can run a farm and do it up in much better style than is done by the old do-as-their-fathers-did farmers. If our Newburyport friends belong to this class of "progressive farmers;" if they propose to engage in farming before learning the trade; if they never swung an axe or pulled a hoe or worked a pair of sheep shears all day long; if they have never known how heavy a bushel basket full of potatoes is late in the afternoon after having toted them to the cart steadily from early morning; if their wives have had no experience in butter and soap making, in trying lard or filling sausages, in taking care of poultry, lambs and pigs, then our advice is most emphatically expressed by just four letters—d-o-n-t!

But perhaps T. C. P. and his friends were brought up on farms and have learned the trade by a regular apprenticeship. If so they do not need our advice. They must know that some people succeed at farming, and some do not; and that like causes in their own case will produce like effects. Failure or success depends on the man, not on the business, whether on a farm or in a shop.

SURPRISE OATS.

I have just cut a piece of oats of which I send you a small package. The stalks are the product of one single oat. The seed came from the Patent Office three years ago, and a few farmers beside myself have them in my immediate neighborhood. I used one and a half bushels per acre, as I supposed, but found after sowing I had a little over an acre and one fourth. They are plenty thick. I shall probably get from fifty to seventy-five bushels from the piece. Last year at thrashing they weighed forty-five pounds a bushel, being altogether ahead of the nasty looking black Norway in weight, color, yield and every particular. The stalks sent are about the average length of the piece. The drought here has caused the grain on the lower branches to blast, as you will perceive. I think with a favorable season and well fitted ground the yield would be large. These grew on a side hill on rather light soil. Some of my neighbors, on heavier land, have a larger growth than mine. Y. Z.

Rutland, Vt., July 23, 1870.

REMARKS.—The stalks received, seven in number, are over five feet in length, and are certainly very handsome specimens, both as to straw and grain. We suppose it is the variety known as the Surprise, which some say is identical with the New Brunswick. The Surprise Oat has been well spoken of by many who have grown it.

HENS WITH SCURVY LEGS.

Can you, or any of your correspondents, tell the cause of a sort of a warty or scaly substance that grows on my hens' legs? Is there any remedy?

Ossipee, N. H., June, 1870.

REMARKS.—We never heard anything of this disease until the large foreign breeds were introduced; and we suppose they are still more liable to it than other breeds. It is generally supposed that the disease is caused by damp, foul apartments, and want of proper care, but we understand that flocks that have good attention have suffered of late. A correspondent of the *Rural New Yorker* says that fowls that show any symptoms of scurvy legs should at once be separated from the others and placed in warm dry quarters. Give them plenty of wholesome food, and as often as once a day some animal food. Wash the legs with a *weak* solution of sugar of lead, in the morning, and annoint them with clean lard, mixed with ointment of creosote, just before they go to roost. Keep them from wet. Others advise to wash the legs with kerosene oil; annointing with salt grease.

FEEDING BONE AND OYSTER SHELLS TO HENS.

In one of the late Boston agricultural papers there appeared a statement of the loss of a large number of hens in consequence of feeding them with ground bone, supposed to have been poisoned in some way.

Having had experience in raising poultry, I am led to remark for the information of new beginners, that bone or oyster shells should never be mixed with meal, or anything else, when given as feed. Bone and shell must be kept entirely separate from all other feed, and made accessible to the fowls, all the year round, and they will, of themselves, eat just as much as is needed, but not a particle more. Shell is generally preferred by fowls, and should be somewhat coarse. The way I adopt to supply these articles is to use a box about six inches square and eight inches long, for a dozen hens. If it stands out doors the roof ought to slope in order to shed the rain. Take out about one-third of the width of one side—the top part—and have a partition in the middle to separate the two kinds. S. B. S.

Boston, July 21, 1870.

REMEDY FOR SCRATCHES.

Take a piece of alum as large as a chestnut, dissolve it in half a teacupful of boiling water; add a tablespoonful of saleratus, and a teacupful of strong vinegar, and use warm. I have found this to be an excellent remedy. T. ROBY.

North Sutton, N. H., 1870.

PLOUGHING IN CLOVER.

I see in the FARMER allusions in regard to ploughing in clover for manure. I would like to inquire the best method of doing it. I have heard that out West when the soil gets exhausted they plough and sow on plaster and clover seed, and plough in a crop of clover. How would it work to plough a piece of land in the spring, and sow on plaster and clover seed? Would the crop get up large enough to plough in the first year? J. M.

Westminster, Vt., July, 1870.

REMARKS.—If sown quite early, on land pretty rich and moist, we think there would, ordinarily, be a good crop to plough under the same season. The ploughing in a crop of clover has become quite common in New England, as a manurial agent, and we think will become general among progressive farmers. It ought to be tried in various ways, and at different seasons and reported, so that all may have the benefit of experiments made.

If ploughing under clover, or any other green crop, will enrich the soil, it would seem that every farmer might keep his land in good condition if he would be careful not to crop his mowing fields until the roots of the grasses are exhausted, so as not to afford a crop worth ploughing under. We must plough more frequently, and while the land is in condition to bring a fair crop to be mingled with the soil and have a visible effect upon it.

Where land will bring a second crop of grass of a ton to the acre, that is frequently ploughed in, and the land sowed to grass again at once, or left for hoed crops, small grains or roots the next season.

We have great confidence in the utility of ploughing in green crops, and hope the practice will become universal among our people.

MASSACHUSETTS AG'L COLLEGE.

With the annual examination of the classes, which took place on Tuesday, August 2, the third year of instruction in the Massachusetts Agricultural College closed. Another class, which will be added September 8, at the commencement of the next term, and another year of study and instruction, are still wanting to put the institution in full working order. Is this always remembered by those who are looking for immediate results, and inquiring what has been accomplished by the College? Next year, for the first time, the usual "Commencement" exercises will be held; then the first "rotation" of study and of classes will be completed.

Many farmers adopt a system of cultivation and cropping which requires four years or more to complete the course. In such case, would it be just to base an opinion of the benefit of the rotation system on an observation of the results of the first two or three years' cropping? We admit that men do sometimes thus judge, and that diverse views are expressed, for instance, of the profitableness of the corn crop, which is usually the first one in the imperfect system of rotation practiced by New England farmers, without due consideration of its connection with, or influence on, the several crops of oats and grass which follow. And in like manner, some are disposed to form an opinion of the benefits of an agricultural college by the results of the first year or two of an incomplete course.

The *Amherst Record* says the late examination was well attended, many strangers from out of town being present. The examinations were held in the chapel, which was decorated with green. The mottoes, "Practice with Science," "Progress with Prudence," were displayed very tastefully over the platform. The young men acquitted themselves well. The examinations were conducted in the usual style by questions, the student being required to turn and face the visitors. The following studies included the course in which the classes were examined: Geology, Veterinary Science, Surveying and Drawing, Agriculture, History, Chemistry, and the Selection and Care of Farm Stock. The latter was conducted in the yard adjoining the farm barn, and the students were, in turn, called upon to point out the different parts of the animal under consideration.

During the evening a levee was held at President Clark's residence, at which members of the Board of Agriculture, Trustees of the College, the Faculty, and students and invited guests were present.

Wednesday morning, at half past eight o'clock, the students were exercised in infantry tactics, under the direction of Captain Alvord, the officers of the different classes taking turns in handling the company. The movements of the company were well executed. The students are hereafter to be drilled in artillery practice, a section of artillery having arrived for that purpose.

The number of students is not far from a hundred, but not so large as stated in last winter's report to the legislature, several being obliged to leave for different reasons.

—Many of the farmers of Orleans County, Vt., are saving grass seed this year.

Ladies' Department.

From Hearth and Home.

MEASURING THE BABY.

We measured the riotous baby
Against the cottage wall—
A lily grew at the threshold,
And the boy was just as tall!
A royal tiger lily,
With spots of purple and gold,
And a heart like a jewelled chalice,
The fragrant dew to hold.

Without, the bluebirds whistled
High up in the old roof trees,
And to and fro at the window
The red rose rocked her bees:
And the wee pink fists of the baby
Were never a moment still!
Snatching at shine and shadow
That danced on the lattice-sill!

His eyes were wide as blue-bells—
His mouth like a flower unblown—
Two little bare feet, like funny white mice,
Peeped out from his snowy gown;
And we thought, with a thrill of rapture
That yet had a touch of pain,
When June rolls around with her roses,
We'll measure the boy again.

Ah me! In a darkened chamber,
With the sunshine shut away,
Through tears that fell like a bitter rain,
We measured the boy to-day;
And the little bare feet, that were dimpled
And sweet as a bubbling rose,
Lay side by side together,
In the hush of a long repose!

Up from the dainty pillow,
White as the risen dawn,
The fair little face lay smiling,
With the light of heaven thereon—
And the dear little hands, like rose-leaves
Dropped from a rose, lay still,
Never to snatch at the sunshine
That crept to the shrouded sill!

We measured the sleeping baby
With ribbons as white as snow,
For the shining rosewood casket
That waited him below;
And out of the darkened chamber
We went with a childless moan—
To the height of the sinless angels
Our little one had grown!

For the New England Farmer.

FLOWER GARDENING FOR SEPTEMBER.

"If we could open, and unbend our eye,
We all, like Moses, should espy
Ev'n in a bush, the radiant Deity."

Surely in all God's works we can trace the imprint of his Divine Hand, and in our gorgeous flowers He grants to us a slight glimpse of the glories of that city beyond the sun, whose light was never seen on land or sea! Our garden beds are at the bright of their beauty and glory, now—but soon the cold hand of King Frost will rob them of all their grace and loveliness. *Asters, Zinnias, Petunias, Verbenas, Geraniums, Gladioli,* and all the Lily tribe form a mass of dazzling brilliancy. We are greatly indebted to Japan for her contributions to our list of garden beauties. The first Japan Lilies were brought over in 1850, by Dr. Siebold; he had also collected many other rare bulbs. The packing cases containing them arrived at Antwerp during the storm of a revolution. They were deposited in a warehouse—afterwards used as a barrack for a troop of French cavalry, and the glorious *Japan Lilies* were all that were saved out of the wreck, the boxes being broken open, and their contents scattered. Prof. Lindley, describing one said, "the diamond bouquets, the queen of Spain's jewels, and even the far famed, priceless Koh-i-noor itself, must pale their ineffectual fires, when compared with this gorgeous flower." It is perfectly hardy, will stand our coldest New England winters unprotected. At first it was treated as a stove plant, but it did not thrive; now it grows in great luxuriance in the open border. It is a gross feeder, requires much stimulant to produce its flowers in rare perfection. *Lilium Auratum*, or *Golden Banded Lily* is much more beautiful, because with its beautiful form, and coloring, it also possesses the most delicious fragrance, perfuming the air, and delighting the senses. As yet, a high price is asked for this gem of the Lily tribe, but as it is easily propagated, both by offsets and seeds, it will soon be offered at so low a rate that all lovers of flowers can revel in its glories. *Gladioli* are a very popular flower, and high sums are asked and received for "novelties." Already the species number above a thousand, and each year, by careful hybridization, more are produced. The bulbs should be stored after the leaves are killed by the frost, in a dry frost proof cellar or closet.

The handsomest flowers of *Asters, Zinnias, Stocks, Balsams,* and all annuals should be tied up, to preserve the seed, taking care in all cases, but the stocks, to select those that bloom apart from the single varieties. With a little labor, and close attention, a lady may save her seed for the ensuing year, and be as certain of good varieties as if she depended upon the seedsman. But the largest and first blossoms of the *Asters* must be saved, picking off all the smaller flowers, so as to throw all the strength into the one designed for seed. With *Zinnias*, select the most perfectly double flowers, and mark with twine or yarn. Verbena seed can be saved, and thus a good supply secured for another year. Seedlings blossom much more profusely than plants raised from cuttings. Mr. Snow of Chicopee, Mass., makes the raising of seedlings a specialty, and his beds are a dazzling mass of beauty. Double flowers produce few if any seed. Stocks are always raised from seed saved from the single flowers. It is well to leave but two or three roots among the double flowers, so as to have them fecundated from them, rather than from the inferior flowers of the single species. *Double Pinks* produce but few seed which must be saved with care, and they will usually blossom true to the parent stock.

Keep your garden neatly, in this month; do not grow careless of its appearance, but prune, stake,

water and weed with an untiring hand. Cut off the perished blossoms whose seeds are not desired; cut off the rose buds whose glories are departed; trail the straggling vines, and tie up the rampant branches.

Perennial and biennial plants that have been raised from seed, can now be transplanted to permanent situations. Select thereof the largest growth, transplant in rainy weather—or after seven o'clock, P. M., and with a small ball of earth adhering to the roots of each plant; water carefully, and the plants will soon take root, and in the following summer flower luxuriantly. All fibrous-rooted plants that may have overspread into a large tuft should be cut off into the desired size.

Almost all perennials may be now increased by dividing the roots. Fleshy rooted plants like *Fraxinellas*, *Irises*, *Peonies*, etc., can now be taken up—their roots parted, and planted again, they will become well rooted before winter—and will produce stronger and finer flowers the ensuing summer. The reason why so many perennials die out, is that they are allowed to increase until they are fairly choked to death. They should be transplanted every two or three years.

At this season, we should strike cuttings of all desirable house plants; if it has not been done previously, set about it directly. Verbenas can be easily propagated by sinking small pots in the ground, and pegging a runner into them, covering it tightly with sand. Bedding out Geraniums can be *tongued*, it is said, and roots will be sent forth. Select a strong vigorous shoot—and cut a slanting slit two thirds through just below a bud or hinge, the plant will endeavor to heal the wound by sending out minute white roots; as soon as two or three appear, separate it from the parent stem, and plant in rich soil.

Dahlias were once the most highly cherished flower of the gardens, but like all things else their day is of the past; but the *Boquet* or *Dwarf Dahlias* are exquisitely beautiful; they are smaller than most of the Asters, and each petal is perfectly cupped. They make most charming pot plants; we have one entirely covered with mauve-colored blossoms deeply tinted with chocolate. *Exquisite* is unsurpassed in beauty by any of the "bouquet" class. It is of a rich golden yellow hue, and its petals are tinted with scarlet. This species is worthy of the attention of all amateur florists. They are not equaled by any other flower for vases or baskets.

The *Double Geraniums* are brought to a high standard of perfection. We possess three of them, all in the fullest bloom, and they far surpass all other plants. Any one can grow a geranium; they need plenty of sunshine, a strong, rich soil, and not much water; their succulent habit fits them to endure our hot, dry summers.

"*Andrew Henderson*" is of a glorious scarlet! These delicious novelties were originated by Lemonis, the prince of geranium cultivators in France. And he deserves the thanks of all lovers of the beautiful for his numerous contributions to our gardens. S. O. J.

DOMESTIC RECEIPTS.

OXFORD DUMPLINGS.—Mix well together the following ingredients: Two ounces of grated bread, four ounces of currants, four ounces of shred suet, a tablespoonful of sifted sugar, a little allspice, and plenty of grated lemon peel. Beat up well two eggs; add a little milk, and divide the mixture into five dumplings. Fry them in butter a light brown color, and serve them with wine sauce.

RUSK.—Take one-half pint of milk, three eggs, one large teaspoonful of butter, two tablespoonfuls of sugar, one-half cup of yeast; mix as batter (not too thin;) set in the sun until light; then knead into a loaf; pull off pieces of equal size; roll in the hands; put them in an oven close together; let them raise and when they have done so, wash them over with egg and sugar, beat together. Bake as quick as possible.

BOILED RAISIN PUDDING.—Half a pound of flour, half a pound of bread-crumbs, half a pound of raisins, three ounces of sugar, two ounces of citron, four eggs, half a teacupful of milk, a little nutmeg and ground ginger, one teaspoonful of brandy. Chop half a pound of kidney-suet very fine, add it to the bread-crumbs, with a little grated ginger and nutmeg; the raisins stoned, the sugar pounded, and the citron cut into slices. Mix it all together, and then stir with it the beaten eggs, the milk and a tablespoonful of brandy. Beat the mixture well together, and boil it in a floured cloth four hours and a half.